

REPORT DOCUMENTATION PAGEForm Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. **PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.**

1. REPORT DATE (DD-MM-YYYY)
02-05-2005**2. REPORT TYPE**
Final Report**3. DATES COVERED (From - To)**
July 2004 to July 2005**4. TITLE AND SUBTITLE**

Designing a Professional Services Billing Process for Brooke Army Medical Center's Trauma Surgeons

5a. CONTRACT NUMBER**5b. GRANT NUMBER****5c. PROGRAM ELEMENT NUMBER****6. AUTHOR(S)**

LONNIE S. HOSEA, LT NC USN

5d. PROJECT NUMBER**5e. TASK NUMBER****5f. WORK UNIT NUMBER****7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)**University Health System
4502 Medical Drive
San Antonio, Texas 78229-4493**8. PERFORMING ORGANIZATION REPORT NUMBER****9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)**U.S. Army Medical Department Center and School
BLDG 2841 MCCS-HFB (Army-Baylor Program in Healthcare Administration)
3151 Scott Road, Suite 1411
Fort Sam Houston, TX 78234-6135**10. SPONSOR/MONITOR'S ACRONYM(S)****11. SPONSOR/MONITOR'S REPORT NUMBER(S)**

34-05

12. DISTRIBUTION / AVAILABILITY STATEMENT

Approved for public release; distribution is unlimited

13. SUPPLEMENTARY NOTES**14. ABSTRACT**

The U.S. Congress has obligated Brooke Army Medical Center (BAMC) to seek the potentially significant reimbursement from health insurance providers for the care delivered to its large number of civilian trauma patients. This study proposed that an accomplishable, seamless, efficient, and effective design can be identified to reimburse BAMC for the professional services of its trauma surgeons. This study also proposes that no legal impediments exist for implementing an itemized billing process for the professional services of BAMC's trauma surgeons. A case study methodology was utilized to perform this study of BAMC's revenue cycle. The first proposition is partially supported, while the second proposal is not supported by this study. The TRICARE Management Activity will need to provide authorization for military treatment facilities to begin performing itemized billing for inpatient services.

15. SUBJECT TERMS

third-party billing, professional services, medical coding, medical billing, healthcare

16. SECURITY CLASSIFICATION OF:

a. REPORT

b. ABSTRACT

c. THIS PAGE

17. LIMITATION OF ABSTRACT**18. NUMBER OF PAGES**

97

19a. NAME OF RESPONSIBLE PERSON Education Technician**19b. TELEPHONE NUMBER** (include area code)

(210) 221-6443

Standard Form 298 (Rev. 8-98)
Prescribed by ANSI Std. Z39.18

Graduate Management Project:

Designing a Professional Services Billing Process for

Brooke Army Medical Center's Trauma Surgeons

Lonnie S. Hosea

U.S. Army-Baylor University

Graduate Program in Healthcare Administration

20060315 099

ACKNOWLEDGMENTS

I would like to express sincere gratitude to my loving wife, Deanna, who has been the pillar of support during the many hours of work during my two-year Army-Baylor adventure. My success is founded on a bedrock of support from Deanna and our new baby girl Jenna. The sacrifices of the last two years are going to be worth the investment our family has paid to get me through Baylor.

Thanks to Thomas Peters, Vice-President of University Health System and my preceptor. Your guidance and real-world outlook on this study and this year have kept me on target and on time. I have learned a great deal under your guidance and leave University Health System with a new paradigm for my career.

I also want to express thanks to the staff at Brooke Army Medical Center—especially Clenton Ballard, Dawn Hunt, and Janine Norton. You gladly invited me into their workplace and set aside significant amounts of time to discuss the intricacies of physicians coding and billing with me. The study would not have been possible without their eager assistance.

Finally yet very importantly, I thank my reader, MAJ Marsha Patrick. You provided me with the inspiration that a qualitative study can have great value to the way I approach problems in the future. You have also inspired me to consider the entire context—professionally and personally—rather than making a narrow analysis of a single issue.

TABLE OF CONTENTS

ABSTRACT.....	4
INTRODUCTION	5
Conditions that prompted the study	6
LITERATURE.....	10
Financial Status of Trauma Centers.....	10
Process Reengineering to Improve Revenue Cycle	15
Legal Foundation	18
METHODS AND PROCEDURES.....	20
RESULTS	24
Contextual Factors	24
Patient Intake	26
Medical Documentation.....	31
Coding.....	38
Billing	43
Collections and Denials Management	51
DISCUSSION	54
Assumptions.....	55
CONCLUSIONS.....	57
IMPLICATIONS FOR FURTHER STUDY	58
REFERENCES	60
APPENDICES	69

Abstract

The U.S. Congress has obligated Brooke Army Medical Center (BAMC) to seek the potentially significant reimbursement from health insurance providers for the care delivered to its large number of civilian trauma patients. This study proposed that an accomplishable, seamless, efficient, and effective design can be identified to reimburse BAMC for the professional services of its trauma surgeons. This study also proposes that no legal impediments exist for implementing an itemized billing process for the professional services of BAMC's trauma surgeons. A case study methodology was utilized to perform this study of BAMC's revenue cycle. The first proposition is partially supported, while the second proposal is not supported by this study. The TRICARE Management Activity will need to provide authorization for military treatment facilities to begin performing itemized billing for inpatient services.

Introduction

“It is clear that DoD's failure to effectively bill and collect from third-party insurers pursuant to law is resulting in an increased burden on the taxpayer” (Department of Defense Appropriations Bill, 2005). It is also clear that Congress is expecting the military health system's (MHS) revenue cycle process for third-party (i.e., other than TRICARE insurance) to improve significantly. The TRICARE Management Activity (TMA) reports that virtually all military treatment facilities (MTFs) have significant room to improve the effectiveness of their third-party collections programs. In addition, on October 1, 2004, Dr. David Winkenwerder, the Assistant Secretary of Defense for Health Affairs, established fiscal year 2005 goals for the Army, Navy, and Air Force's third-party collections programs (Thomas Sadauskas, Deputy Director of the Uniform Business Office, TMA, personal communication on May 3, 2005).

Brooke Army Medical Center operates one of the three Level I trauma centers that are located in San Antonio, Texas. It provides approximately 25% of the Level I trauma services to the citizens of Trauma Region P in South Texas (See Figure 1, Appendix A). While many civilian trauma centers bill and collect reimbursement for the professional services of their employed medical staff, BAMC has no third-party billing process to obtain this revenue. A potentially large number of privately insured trauma patients are treated at BAMC. The prospective revenue generated by billing sources of third-party funding might have significant impact on the trauma program's profitability. The opportunity cost of not implementing a third-party reimbursement program for the professional services of its physicians is potentially costing BAMC millions of dollars in lost revenue. This study will suggest how the revenue cycle processes of military treatment facilities could be reengineered to generate third-party reimbursement for the professional services of trauma surgeons.

Conditions that prompted the study

Since 1975, three Level I trauma centers, Brooke Army Medical Center, Wilford Hall Medical Center (Air Force), and University Hospital, have provided comprehensive trauma services to Bexar County and 21 other counties in South Texas (Trauma Institute of San Antonio (TRISAT), 2003). In 1994, the Critical Care and Transfer Coordination Board (CCTCB) was formed to bring all of the Bexar County trauma organizations together to improve the coordination of trauma transfers in the trauma service area (personal communication with Bill Rasco, Chief Executive Officer, Greater San Antonio Hospital Council on October 20, 2004). The CCTCB brought the South Texas trauma centers together for the first time to discuss the issue of improving the transfer of critically ill patients within the Trauma Service Area P. Although there was individual establishment support from each of these centers, no formal trauma association existed to improve coordination of Level I trauma services and cooperation between these organizations. These three centers recognized a need to improve the quality and coordination of trauma care in the South Texas Trauma Service Area P and designed a collaborative organization to improve cooperation between the centers.

On December 19, 2001, a Congressional grant was appropriated to the University of Texas Health Science Center, San Antonio (UTHSCSA) for the purpose of establishing a joint military and civilian Trauma Research Center (Making Appropriations for the Department of Defense for the fiscal year ending September 30, 2002, and for other purposes, 2001). Through this grant the three trauma centers and UTHSCSA agreed to establish the Trauma Institute of San Antonio (TRISAT). The UTHSCSA faculty, who provide all of the staff physicians for University Hospital, administrates the grant fund and manages the day-to-day operations of TRISAT. Governance for TRISAT is the responsibility of a Command Council. The Command Council members are the Commanding Officers of Brooke Army Medical Center, Wilford Hall

Medical Center, and U.S. Army Medical Research and Materiel Command, as well as the President and Chief Executive Officer of University Health System, and the Executive Vice President for Academic and Health Affairs, UTHSCSA.

The charter for the TRISAT is to improve cooperation and coordination between the three Level I trauma centers and thereby improve the quality of trauma services in South Texas. One of the specific goals for the grant is the establishment of "... a framework for the provision of Trauma Service throughout San Antonio and South Texas by determining resources required, developing a plan to address resource shortages, and seeking resources for the implementation of the plan" (Trauma Institute of San Antonio, 2003, p. 4).

The consulting firm Bishop & Associates was commissioned by TRISAT to perform a financial assessment of the three Level I trauma centers in San Antonio. The financial analysis of the three trauma programs indicated that none of the three programs were profitable although they were very much needed to support the trauma care needs of South Texas. Bishop & Associates noted that other than the unique payer mix, in all other respects BAMC is an average Level 1 trauma center. Characteristic of urban trauma centers, BAMC has a lower proportion of private paying (i.e., with health insurance) patients. The high rate of uninsured patients in the trauma service area combined with the high cost of delivering trauma care have significantly contributed to BAMC's inability to generate adequate operating revenue to cover the direct cost of trauma care (Bishop & Associates, 2004b). The Department of Defense (DoD) does not fund BAMC to deliver an unending amount of care to indigent patients. It is funded by the DoD to care for and promote the health of military healthcare beneficiaries.

Using the National Foundation for Trauma Care's (NFTC) benchmark trauma costing data, Bishop & Associates modeled BAMC's cost of providing trauma services. According to

Bishop's calculations, BAMC's trauma services have suffered an operating loss of \$8.76 million on billed charges of \$6.35 million versus \$14.5 million in expenses. Bishop & Associates concluded that by improving the patient registration system, the pricing of trauma services, the billing and collections systems, and the case management system, BAMC could generate an additional \$6.9 million. The loss from trauma services would be decreased to \$1.24 million (Bishop & Associates, 2004a). In addition, by implementing a professional services billing process for the trauma surgeons, BAMC could generate an additional \$1.5 million in revenue (Bishop & Associates, 2004b, p. 3). BAMC currently generates no revenue from professional services billing (Bishop & Associates, 2004a).

Three main forces are driving the performance of this study. First, as Bishop & Associates has reported, BAMC could improve its sources of revenue for delivery of trauma care by implementing a professional services billing process for its trauma services. Financially maintaining an urban academic trauma center is extremely expensive (Biffle et al., 2002). Maximizing the revenue from all sources is essential to improving the quality and amount of trauma service, research, and education because the service region has such a large number of uninsured patients that are unable to pay for healthcare. In addition, although BAMC delivers approximately 70-80% of its trauma care to non-DoD beneficiary civilians, it receives negligible amounts of revenue from reimbursement of care for those patients (Bishop & Associates, 2004b).

The second force driving the performance of this study is the request of the Brooke Army Medical Center executive leadership. The executive staff fully supports the TRISAT initiative to improve the financial stability of the trauma system in South Texas. The executive leadership also agrees that there are potentially millions of dollars for the reimbursement of professional

services which could be reinvested into BAMC's general operating fund and trauma program. Increasing BAMC's financial stability will also strengthen its leadership role in providing patient care, trauma research and education, and trauma system planning. The American College of Surgeon's (ACS) verification process requires that all Level I trauma centers provide leadership in these areas (American College of Surgeons, Committee on Trauma, 1998).

The third force driving the performance of this study is that no comparable process has been developed anywhere in the military health system. While the military health system has been authorized to bill third-party payers for the care provided to beneficiaries and non-DoD beneficiaries, no effective process has been designed to efficiently bill these payers for the professional services provided in an emergency or trauma environment. Additionally, the military health system is transitioning to an itemized billing methodology for third-party payers. Currently, care is billed as a bundled charge (i.e. facility and professional fees in a single charge). The move to itemized billing will more closely align the military health system with the billing practices of the civilian health industry (Office of the Assistant Secretary of Defense (Health Affairs) (OASD(HA)), 2002b & Office of the Chief Financial Officer, TRICARE Management Activity, 2004).

Although there are many trauma programs throughout the country that bill for the professional services of employed medical and surgical providers, designing a process for the military health system may be completely different. The unique mission—supporting the active duty service members—of the MTF may contextually alter the design of the revenue cycle process from the experience of other healthcare organizations. Strengthening the financial status of BAMC's trauma program supports the citizens of South Texas, and also supports the needs of

the active duty service members by providing medical residents with trauma skills that will be needed on the battlefield.

Literature Review

Financial Status of Trauma Centers

The Trauma Care Systems Planning and Development Act of 1990 began encouraging the formation of regional trauma systems to improve the function and financial status of trauma services in the U.S. (United States General Accounting Office (GAO), 1991). Although much was being done to improve the financial status of trauma centers, a 1994 article indicated that approximately 80% of these centers were unable to cover the total cost (direct and indirect) of delivering trauma services (Eastman, Bishop, Walsh, Richardson, & Rice, 1994). A subsequent GAO (1995) report indicated that while a large number of federal grants had been distributed to improve the financial status of trauma systems, the systems were still having difficulty meeting financial obligations. Trauma centers are still facing overwhelming economic challenges. For example, most of these organizations have an unfavorable payer mix because they provide a large amount of uncompensated care and they are under-reimbursed by public programs (e.g., Medicare & Medicaid) (Biffle et al., 2002).

In its 2004 report, *U.S. Trauma Center Crisis: Lost in the Scramble for Terror Resources*, the National Foundation for Trauma Care (NFTC) discussed the financial and operational strains for U.S. trauma center. According to this report, if these strains are not alleviated, 10 to 20% of the Level I Trauma Centers in the U.S. will close within the next couple of years. The NFTC's report highlights uncompensated care as a major contributor to the poor financial status of trauma centers. Urban trauma centers, such as BAMC, are required to provide care for a higher percentage of indigent patients than rural trauma centers that care for a much higher percentage of insured patients (Fath, Ammon, & Cohen, 1999). Some urban institutions

report that up to 90% of their unfunded trauma patients will not be able to pay for their care (Selzer et al., 2001). Additionally, many urban trauma centers are viewed by patients and referring physicians as depositories for uninsured patients (Biffl et al., 2002).

Trauma centers are collectively losing \$1 billion per year due to numerous contributory causes. Some of these causes are a growing number of patients without means to pay for healthcare and poor reimbursement from state Medicaid programs. Additionally, although automobile injuries account for 59% of the trauma center patients, auto insurance plans provide only a small amount of the national trauma reimbursement (National Foundation for Trauma Care, 2004).

Public programs do not provide adequate reimbursement for the delivery of trauma services to those citizens without adequate healthcare coverage. To maintain the financial solvency of facilities that care for a large percentage of the indigent population, Congress passed the Omnibus Reconciliation Act of 1981. This Act provided states with the opportunity to receive matching funds to allocate to their safety-net hospitals. Safety-net hospitals are those hospitals “. . . that organize and deliver a significant level of health care and other related services to the uninsured, Medicaid, and other vulnerable patients” (Institute of Medicine, 2000, p. 21). Disproportionate Share funds that were distributed to the safety-net facilities rapidly grew from \$400 million in the late 80s to over \$19 billion by the late 90s. Though the additional funds have not been enough to create financial stability of most trauma centers, the continued disbursement of these funds is essential for maintaining the financial solvency of most Level I Trauma Centers (Selzer et al., 2001).

In addition to maintaining public funding support, trauma centers have increased their concentration on internal revenue cycle management. The healthcare revenue cycle is defined as

all of the “ . . . processes required to insure the successful and timely capture of revenues due the institution for patient care provided” (Testimony of Donald N. Blanding, 2003). The revenue cycle begins with the patient intake (appointment scheduling in the outpatient setting), and continues through patient treatment, discharge, billing, and collections. A breakdown in any area of the revenue cycle can lead to a healthcare organization being denied (or delayed) payment for care rendered. Inaccurately recording insurance information at the beginning of the revenue cycle is an example of a breakdown in the revenue cycle. Another example is the lack of identification of patients who possess third-party insurance (e.g. workman’s comp, auto insurance) coverage. Both of these examples are major reasons for healthcare institutions not being reimbursed for the delivery of care (LaForge & Tureaud, 2003).

Over the past decade the increasing cost of delivering care (GAO, 2004) has motivated many U.S. healthcare organizations to improve their revenue generation processes. In addition to increasing costs of delivering healthcare, lower reimbursement rates have focused many trauma care providers to improve inefficient and ineffective areas of their revenue cycle. The result of ineffective revenue generation has been the discontinuance and/or limitation of certain clinical services. A prominent example is the continued closure of hospital emergency rooms and/or trauma centers due to the worsening financial status of these services (“Two Emergency Rooms,” 2004).

Under many of the same pressures to improve financial operating procedures as their private sector counterparts, military healthcare organizations, such as BAMC, are being required to improve their revenue cycle processes as well. In addition to operating pressures, oversight agencies, such as the GAO, are beginning to monitor the financial management of military healthcare organizations’ revenue cycle (GAO, 2002 & GAO, 2004). The third-party collections

programs, which deliver reimbursement revenue from other than defense health funding, has come under increased scrutiny. The GAO stated in a 2004 (p. 2) report that the “DoD’s failure to effectively bill and collect from third-party insurers, in effect, reduces the amount third-party private sector insurance companies must pay out in benefits and unnecessarily adds to DoD’s increasing healthcare budget—financed by taxpayers.”

The GAO (2002 & 2004) has reported that the military health system has performed poorly in the design, implementation, and management of its third-party reimbursement programs, the only revenue cycle programs that are comparable to civilian healthcare organizations. The GAO also observed that the DoD was failing to collect tens of millions of dollars because it had not effectively billed and collected available reimbursement from private insurance and public reimbursement sources (GAO, 2004). The GAO (2004, p. 3) stated, “We reaffirm our position that the DoD has the opportunity, as well as a fiduciary responsibility to taxpayers, to maximize its collection efforts under this program”. Though the GAO found many weaknesses in the programs, such as incomplete medical documentation and coding of care provided and insufficient monitoring of accounts receivable, the single biggest barrier to collecting reimbursement was the lack of identifying patients with third-party insurance. Many times when the information was available to seek reimbursement, a bill was not generated and sent. Additionally, payment denials were not promptly addressed to seek proper payment (GAO, 2004) even though an aggressive appeals program can turn a 10 to 1 return on investment (Barber, 2003).

In a 2002 GAO case study of five areas of internal control within the MHS, all five areas were deemed to be poorly designed and incorrectly implemented at each of the three MTFs being evaluated. Examples of internal control weaknesses were the lack of patients with third-party

insurance being identified, and the inaccuracy and untimeliness of the third-party billing and collection process (GAO, 2002). Officials at all three of the MTFs discussed the current cumbersome billing process that required a large amount of manual intervention as to reasons that bills were not sent promptly. In addition, as recognized by Laforge and Tureaud (2003) to be contributors to inadequate revenue cycle controls, the lack of alignment between administrative, clinical, and financial functions were noted by the GAO as major contributors to the poor internal controls of the third-party programs. For instance, at Wilford Hall Medical Center, many of the reasons for not billing third-party insurances were “. . . lost forms, clinical data coding or input problems, lack of staff to handle high workloads, missed billings due to clerical oversight, and a complicated multi-step billing process were explanations provided for not billing for reimbursable care” (GAO, 2002, p. 8). In addition, when bills were finally sent to reimbursement agencies, they were sent late—greater than 30 days after discharge for inpatient admissions and greater than 90 days for outpatient visits (GAO, 2002, p. 10).

One area of opportunity that the military health system has not made a concerted effort to improve has been the third-party billing for the professional services of trauma care provided to patients at MTFs. Though title 10 of the United States Code (USC) §1079b (2001) authorizes the military to charge fees for care provided to civilians, an efficient and effective billing process has not been developed at any military treatment facility. In addition, the military health system has reported that it is transitioning to an itemized billing processes for inpatient and outpatient services to be more consistent with civilian health insurance industry (Office of the Assistant Secretary of Defense (Health Affairs) (OASD(HA)), Department of Defense, 2002). While some advances have been made in implementing itemized billing, no revenue cycle process has been developed to effectively bill separately for facility and professional services. The

authorization for MTFs to bill for trauma services provided to non-DoD beneficiaries and the military health system's push to develop and implement itemized billing procedures presents an opportunity to design and implement a process for which BAMC can seek enhanced reimbursement for costly trauma services.

Process Reengineering to Improve Revenue Cycle

There are many different approaches to improving the revenue cycle of healthcare organizations, but any process improvement should have a framework in which to proceed toward a goal. Business process reengineering is a radical framework for making drastic improvements to maximize effectiveness. One guide in this methodology for any organization, but especially federal government agencies, is the *Business Process Reengineering Assessment Guide* (GAO, 1997). This guide is a comprehensive methodology to designing and implementing organizational process improvement.

Although process reengineering has three phases (Deciding to pursue reengineering, Developing the new process, and Implementing the project and assessing the results (GAO, 1997)), the major consideration of reengineering on this study will be the development phase. To achieve maximum effective results from redesigning business processes, sound reengineering methodology should be utilized (GAO, 1997). Portions of other phases that directly effect process design may be considered. Prior to and during the design phase, organizational processes may often need to be altered to accommodate the reengineered process. *Figure 2* (Appendix B) illustrates this impact (GAO, 1997). Delaying or not considering the impact on other organizational processes can create worse conditions after the reengineering than had existed prior to the redesign.

Although business process reengineering has tremendous potential to improve organizational effectiveness, 70% of these projects fail due to the lack of sustained management commitment and leadership, unrealistic scope and expectations, and organizational resistance to change (Malhotra, 1998). To begin reengineering any process, strong executive leadership in championing the effort and managing change must be a continuous force from the start to finish of the project. Without such support, even the best process design may fail to be accepted and implemented (GAO, 1997). Ownership and vision of the end-state of the process will be essential to the success of the project.

In addition to strong executive leadership, a stakeholder assessment should be made to find where and why there might be organization resistance to change. Techniques for assessing and productively dealing with resistance to change such as those introduced by Bennis, Benne, and Chin (1969) might be considered. One of these techniques includes decentralizing the change design and implementation by seeking input and participation from a variety of individuals throughout the organization. Openness to obtaining input from a diverse group of individuals will help to explore fully the alternatives and options within the change process. In addition, Bennis et al. (1969) concluded that organizational support of pragmatic, imaginative problem-solving techniques from all levels of the establishment was essential to overcoming resistance to change.

Healthcare organizations can significantly improve revenue cycle processes by using the framework of business process reengineering. In the past, hospitals have concentrated their efforts on the end of the revenue cycle (billing and collections), yet most revenue cycle problems originate early on the process (e.g., when the hospital is collecting and verifying patient information that is needed to submit a clean claim). Hospitals should concentrate their efforts on

preventing inaccurate information on the front end (i.e. patient registration and medical documentation) from causing claims denials rather than addressing problems after a claim has been denied (Atchison, 2003). In addition, hospitals should concentrate their efforts on processing information within the context of a flow rather than as a series of unrelated events (Laforge & Tureaud, 2003).

Investment in human resource needs is another area that could improve the performance of revenue cycle programs. Examples of these needs are clear job specifications (i.e., requisite knowledge, skills, and abilities), competitive benefits programs, sufficient job training, and explicit job standards. These enhancements will assist personnel to perform better and may reduce the amount of staff turnover—another factor undermining the revenue cycle (Laforge & Tureaud, 2003). Providing timely training for staff regarding relevant state and federal regulations as well as private payer requirements regarding the payment for health services are essential.

Additionally, the ability to measure the effectiveness of the billing process through information technology solutions will improve the timeliness and quality of revenue generation decisions. Metrics, such as aged accounts receivable and denial rate, and qualitative data, such as communications with the payer and dates claims were mailed, should be tracked and acted on when (or before serious) problems arise (Barber, 2002). Information management solutions may also improve the productivity of workers by decreasing the amount of manual computations and recordkeeping that need to be performed.

Another aspect of a well-designed healthcare billing process is that it be patient-friendly (Rappuhn, 2003). Although direct payment from the patient is a small portion of the revenue received by the organization, the patient's actions can have an effect on the efficiency and

effectiveness of the patient billing process. Rappuhn discusses several methods for improving the patient-friendliness of the billing process. First, patients must understand the basics of the financial aspect of providing healthcare and their responsibility regarding this aspect. Bishop & Associates (2004) concurred with this recommendation by stating that patients should be well-informed of their financial responsibility prior to leaving the facility. Patients who understand their responsibilities are more likely to comply. Second, the organization must have effective procedures implemented to resolve disputes regarding outstanding claims in a prompt manner. Third, the organization must promptly assist patients to resolve any questions or complaints that they might have regarding the billing process.

Legal Foundation

The legal foundation for itemized billing for the professional services of military trauma surgeons at BAMC rests in a group of public laws and regulations. All MTFs are responsible for implementing a Third-Party Collections Program. Military Treatment Facilities are also responsible for obtaining a Third-Party Collection Program and obtaining a current (i.e., completed within the last 12 months) Insurance Information Form (DD Form 2569) from every patient. Updated and accurate Insurance Information Forms ensure accurate billing information is available for the MTF to utilize when billing third-party payers (Office of the Assistant Secretary of Defense (Health Affairs) (OASD(HA)), 1997).

Military treatment facilities are given the legal authority to bill traditional health insurance, automobile liability insurance, and no-fault insurance carriers for care provided to beneficiaries of the MHS (Health Care Services Incurred on the Behalf of Covered Beneficiaries: Collection from Third-party payers, 2002). In addition, MTFs have also been authorized to bill third-party insurance for care provided to non-DoD beneficiary patients (Procedures for charging

fees for care provided to civilians; retention and use of fees collected, 2001). The Code of Federal Regulation (C.F.R.) 220.1 indicates that third-party insurance companies must reimburse reasonable charges (i.e. CHAMPUS Maximum Allowable Charge rate) for all covered healthcare services of their beneficiaries. Thus, insurance companies cannot deny payment for services because care was rendered in an MTF (OASD(HA), 1997). Trauma services are specifically mentioned as an example of a reimbursable service (OASD(HA)), Department of Defense, 2002).

An additional legal foundation for itemized billing for professional services is in the Fiscal Year 2002 National Defense Authorization Act (NDAA). It orders the military health system to adopt itemized billing, which would more closely align the military health system with civilian health industry practice. Rather than utilizing the historical method of global billing, MTFs are adopting a new approach. The new approach involves billing separate facility and professional charges when seeking reimbursement from third-party payers for outpatient services. The standard practice in the health insurance industry is to require an itemized bill prior to any payment (OASD(HA)), Department of Defense, 2002). In addition to the itemized billing requirement, the billing practices of all MTFs must comply with the data elements and code specifications of the National Uniform Billing Committee and the Uniform Claim Forms Task Force (OASD(HA), 1997).

Brooke Army Medical Center also has guidance in seeking reimbursement from federal government and state of Texas sources of third-party reimbursement. Medicare will only reimburse MTFs for care provided to non-MHS beneficiaries (Center for Medicare and Medicaid Services (CMS), 2003). Regarding reimbursement for professional fees, Medicare will only

make payment to the facility when the provider is an employee of the facility—as is the case with the active duty military trauma surgeons at BAMC (CMS, 2003).

The state of Texas provides guidance for MTFs seeking reimbursement from Medicaid and County Indigent Health Care Programs. Military hospitals can obtain reimbursement from Medicaid for inpatient emergency care delivered to Medicaid beneficiaries. The Texas Medicaid program will not reimburse military providers for outpatient or follow-up service. (Medicaid Health Service: Provider participation requirements, 2002). Military facilities are not required to be licensed in the state of Texas, but must have a valid provider agreement with the Texas Health and Human Services Commission (Texas Health and Human Services Commission, 2003).

Another source of funding, the County Indigent Health Care Program, is not authorized to provide reimbursement to military treatment facilities for care rendered to indigent patients. The County Indigent Health Care Program is a mandatory program for all counties in the state of Texas. It provides health coverage to the individuals without health insurance. Funding for this program is derived from county sales tax and/or property tax (County Indigent Care Program, 2004). CareLink is the name of this program in Bexar County.

Method and Procedures

The methodology for this exploratory qualitative research study was based on the techniques of case study. Guided by a prior-developed theoretical proposition, the case study method is an empirical inquiry that is utilized when the researcher wants to cover the contextual conditions of the subject being studied. Where experiments attempt to exclude (or control) by utilizing a limited number of contextual variables, the case study method attempts to analyze multiple sources of data (e.g., interviews, literature, regulatory guidance) with many variables to

develop convergent information in answering research questions (Yin, 2003). “The case study as a research strategy comprises an all-encompassing method—covering the logic of design, data collection techniques, and specific approaches to data analysis” (Yin, 2003, p. 14). Although case studies can be a mix of quantitative and/or qualitative evidence, this study will develop the qualitative data required to design the professional services billing process.

The case study is the preferred methodology when performing research to answer “why” and “how” questions. The case study method is also valuable in evaluating contemporary issues, when the behaviors of the organizations cannot be manipulated by experimental means (Yin, 2003). The case study approach was particularly useful in this study because it provided guidance in gathering and organizing information to examine the development phase of business process reengineering. The *Business Process Reengineering Assessment Guide* (GAO, 1997) was utilized as a framework to develop the contextual information sought in the case study protocol. Subsequently, process reengineering theory guided the data collection process.

The conceptual model for this study is illustrated in *Figure 3* (Appendix C). During the course of this study, many different stakeholder and situational analyses were performed to guide decisions related to components of the billing process. Process stakeholders were identified through meetings, interviews, and document review sessions. A combination of civilian and MHS revenue cycle concepts, within the framework of business process reengineering, were the foundation for developing a billing process for the inpatient professional services of the BAMC trauma surgeons. The entire process development was considered within the context of BAMC being a federal entity—falling under the statutory and regulatory guidance of the federal government.

This study had two propositions. First, this study proposed that an accomplishable, seamless, efficient, and effective design could be identified to reimburse BAMC for the professional services of its trauma surgeons. The conceptual model of this seamless process is presented in *Figure 4* (Appendix D). The second proposition was that no legal barriers (statutory, regulatory, or judicial) exist preventing the implementation of a process to obtain third-party reimbursement for the professional inpatient services of physicians who deliver care in MTFs.

The single case study design was chosen due to the complexity of the subject matter as well as the limited resources (e.g., time, funding). The development of the billing process was divided into five embedded units: (1) Patient intake; (2) Medical documentation; (3) Coding; (4) Billing; and (5) Collections and denials management. Upon completing the process development, an analysis was performed regarding the context of interactions between the process units and the overall professional services billing process. The contextual evaluation and discussion criteria for evaluating each of the process areas can be found in the Case Study Protocol (Appendix E).

The criteria for linking data to the propositions were *efficiency*, *effectiveness*, *accomplishable*, and *capability of promoting seamlessness* in the process. Evaluating these criteria through a convergence of information was the foundation for decisions within the process development (Yin, 2003). Proposition one was evaluated by all four criteria, but proposition two was only evaluated by the accomplishable criteria. As illustrated in *Figure 5* (Appendix F), the various sources of information converged to link the study's evidence to the two propositions. To improve the understanding of the terminology utilized in this study, a glossary of terms has been included in Appendix G.

When several sources of information, such as regulatory, Bishop & Associates, and BAMC's stakeholders, converge to support a decision, the internal validity of the study is strengthened (Yin, 2003). Since the researcher alone evaluated the information, bias may have been potentially introduced in into the study (Yin, 2003). A diligent attempt was made to provide unbiased reporting and analysis of the linkages between the study's question and the results.

To improve the validity of the study, a critical analysis of the study's report was sought from key stakeholders and process owners prior to releasing the results. These individuals were hand-delivered a paper copy of the report and given two weeks to respond. This review required the stakeholders and process owners to provide input regarding the face validity of the study as well as provide any disagreement with the study's evidence, linkages to propositions, conclusions, and implications. "The ultimate test of the credibility of an evaluation report is the response of the information users and readers to that report. This is a test of face validity" (Patton, 1990, p. 469).

The reliability was addressed through closely documenting the data collected as well as the rationale for deciding each of the design processes. "The objective [of reliability] is to be sure that if a later investigator followed the same procedures as described by an earlier investigator and conducted the same case study all over again, the later investigator should arrive at the same findings and conclusions" (Yin, 2003, p. 37). To be reliable, case study research must be auditable (Yin, 2003). To increase the reliability of the study, a great deal of effort was focused on clear, accurate, and adequate documentation of the collected data.

Results

Contextual Factors

Although Congress mandated itemized billing of third-party payers the Health Insurance and Portability and Accountability Act of 1996 (GAO, 2004), the MHS has only implemented outpatient itemized billing. The TRICARE Management Activity, who has regulatory authority over the MHS, has not authorized MTFs to perform itemized billing for inpatient services. Itemized billing for the outpatient services of military treatment facilities is currently being performed through the Third-Party Outpatient Collection System (TPOCS). The TPOCS is being utilized to bill for the outpatient health services provided to military beneficiaries, but not non-beneficiary patients (C. Ballard, Chief, BAMC Uniform Business Office, personal communication, October 6, 2004).

The MHS was scheduled to begin implementation of inpatient itemized billing during 2004, but difficulties with the implementation of the outpatient itemized billing have delayed the implementation of inpatient itemized billing. While BAMC is awaiting authorization to perform itemized billing for inpatient services, it has installed software intended to align the MHS with the civilian methodology for accounting for clinical workload. Allowing for individual coding of professional inpatient services will assist in implementing an itemized billing process for inpatient services. Although the software is currently being utilized to track workload, no itemized bills are being generated. The implementation of inpatient itemized billing for the MHS is expected to be delayed until 2007 (C. Ballard, personal communication, October 6, 2004). Although an itemized professional services billing process cannot be implemented until later, the stakeholders at BAMC universally agreed to the increased value of designing the

process now. The results of this project specify a design for effectively obtaining reimbursement from payer organizations for the services of BAMC trauma surgeons.

The third-party reimbursement in the MHS is divided into two programs—the Third-Party Collections Program and Medical Service Accounts. The Third-Party Collections program is designed for MTFs to bill and collect insurance payments for providing care to MHS beneficiaries (i.e., active duty and retirees as well as their dependents). The Medical Service Accounts are intended to collect payments for the care of non-beneficiaries of the MHS (e.g., civilians, foreign nationals, other federal department/agency employees). The MSA payments can come from a wide variety of sources—Medicare/Medicaid, private insurance, Workers' Compensation, and private pay patients etc. (U.S. Army Medical Command, 2001). Although non-beneficiary patients are actually responsible for paying for their care, the Uniform Business Office staff will seek reimbursement from third-party health insurance when the patient provides adequate billing information. Due to the large amount of trauma services delivered to civilians at BAMC, the a large amount of the Medical Service Account billing/collecting for the U.S. Army is performed at BAMC. Subsequently, the design of an itemized billing process for the professional services of the BAMC trauma surgeons to non-beneficiary patients is related to the Medical Service Account and not the Third-Party Collections Program.

There is no single process owner for BAMC's revenue cycle and there is little organizational support to centralize the ownership of BAMC's revenue cycle (S. Cuda, Chief, Department of Health Care Operations and D. Rusing, Senior Data Analyst, personal communication, October 26, 2004). Additionally, the current system does not provide explicit incentives for revenue cycle stakeholders to maximize the effective recovery of third-party reimbursement (Third-Party Collection Program and/or Medical Service Account) for care

delivered at BAMC. While other MTFs have utilized programs such as reimbursing a percentage of third-party collections directly to the clinical service from which they were derived (e.g., per my personal experience with the Emergency Department at Naval Hospital Great Lakes), no significant support currently exists among the leadership at BAMC to initiate any such incentive program. When TMA provides authorization to perform itemized billing for inpatient services, these two factors may potentially be major impediments to successfully implementation of the new process.

The current MSA process actually provides a disincentive for BAMC to aggressively seek reimbursement. If full reimbursement is not collected from an individual and/or their insurance, BAMC submits the individual's indebtedness information to the Defense Finance and Accounting Service or the U.S. Army Medical Command. The Defense Finance and Accounting Service can seek reimbursement directly from the individuals through an indebtedness collections program and/or collection of any federal tax reimbursement. The Army Medical Command reimburses BAMC for any Medical Service Account reimbursement that it is not able to collect from individual patients and/or insurance companies (S. Cuda, personal communication, October 26, 2004). The amount of FY04 reimbursement to BAMC from USA MEDCOMM for uncollected MSA was \$19.04 million (R. DeVries, Budget Officer, personal communication, April 6, 2004).

Patient Intake

The revenue cycle begins as the patient is accessing the healthcare facility to seek services. Obtaining accurate identification and insurance information as early as possible during a trauma patient's admission to BAMC is essential to obtaining reimbursement. Healthcare payer organizations expect to be contacted as soon as possible when a patient requires health

services. For elective procedures, the normal process is to contact prior to the patient's admission, but when a patient is being admitted for a traumatic injury, these organizations are more lenient. The insurance companies generally expect to be notified within 24 hours—possibly later if patient/family is unable to communicate insurance information—of the patient's admission. If notification is not prompt, the insurance organization may refuse to pay for the patient's treatment (C. Ballard, personal communication, November 18, 2004). A traumatic injury may complicate the notification process because the patient may be unconscious or incapacitated for an extended period before he is able to provide any identification and/or insurance information.

Figure 6 (Appendix H) displays the current patient intake process and lists the initial information that is essential for the revenue cycle. The BAMC Emergency Department Coordinators obtain and record the information required upon admission of a trauma patient. The Emergency Department Coordinators are BAMC employees who obtain the information from the trauma patients, but do not perform the administrative functions that actually admit the patients into the hospital. Utilizing information collected by the Emergency Department Coordinators, the Admissions and Dispositions Office staff perform the administrative work necessary to admit patients to BAMC (A. Vega, Supervisor, BAMC Emergency Department Coordinators, personal communication, January 20, 2005). A significant amount of tension exists between staff in the Emergency Department, the Admissions & Disposition Office, and BAMC's Uniform Business Office regarding the lack of seamless ownership of the information required to bill for trauma patient services. There are many factors contributing to the low number of trauma patients that are admitted to BAMC with a completed BAMC 1188 Form—synonymous with Third-party Collections Form (DD 2569). The Third-party Collection Form is

utilized to obtain and update healthcare insurance of all patients at BAMC (inpatient and outpatient). To properly bill for services rendered, BAMC's policy is to have a timely and accurately completed Third-party Collections Form for all patients (Department of Healthcare Operations, 2004).

The Emergency Department Coordinator is responsible for initiating the collection of patient insurance information for the Third-Party Collection Form as well as initiating the collection of information required to admit the patient (Name, social security number, gender etc.). Many times the Emergency Department Coordinators are unable to complete the Third-Party Collections Form accurately during the initial patient intake. The incomplete information results in gaps that are inhibiting the effective and efficient flow of accurate patient information. For example, due to their injury, many patients are not able to communicate accurately while other patients do not tell the truth to hospital staff when asked about their insurance information. The incomplete and sometimes inaccurate information is being forwarded to the Admissions and Dispositions Office as well as the Uniform Business Office. The Emergency Department Coordinators complain that the Uniform Business Office and Admissions Dispositions Office are accusing them and of not working diligently to ensure Third-Party Collection forms are being completed (A. Vega, personal communication, January 20, 2005). The Admissions and Dispositions Office staff complain that incomplete records are frequently arriving to the Admissions and Dispositions Office and to the Uniform Business Office (K. Armstrong, Noncommissioned Officer in Charge, Admissions and Dispositions Office, personal communication, January 20, 2005). The Admissions and Dispositions Office and the Uniform Business Office staffs are currently following up on many, but not all, trauma patients to obtain and/or verify information necessary to bill insurance during the period of the patient admission.

Rather than informing the trauma patients while they are still inpatient admissions, many attempted follow-ups occur well after the patients have been discharged.

The Uniform Business Office collects, records, and tracks individuals with completed the Third-Party Collections Form via the Composite Health Care System (CHCS). Currently the business office uses an open text field within CHCS where anyone who is able to log in to view patient profiles on CHCS could potentially have access to change the field. A system change request has been placed to modify the field so that only the business office staff can access field. The current process of recording and monitoring other health insurance information leads to a lack of control regarding valid entry of timely insurance information into CHCS. The change will enable the Uniform Business Office to strengthen its ownership for recording and maintaining insurance information by improving the control to enter data into CHCS.

Two improvements will be essential to decreasing the organizational friction and increasing the effectiveness of admission and billing processes for trauma services at BAMC. First, the admissions office should take ownership for validating all required admission information. Additionally, the business office staff should take ownership for validating any further information required to bill for trauma services. The quality of the information flowing will improve because these two functional areas are experts regarding the information concerning these respective matters. In addition, since case managers are now specializing in assisting trauma patients (M. Dewitt, Trauma Division Program Manager, personal communication, December 3, 2004), they should also be utilized to improve the timely and reliable flow of information between the patient and the Admissions and Dispositions Office and the Uniform Business Office. A second improvement relates to tremendous effect that different functional areas within BAMC have on the flow of information required to bill a patient's

insurance company. Representative members of these functional areas—Emergency Department Coordinators, Admissions and Disposition Office staff, Medical Staff, Coders, Case Managers, and Uniform Business Office staff—should meet periodically to improve the information flow process and let other members know when changes to the process are needed or required. The current situation is leading to much angst between departments, but not much problem solving. Scheduled, well-run meetings could potentially reduce the organization friction, as well as increase the Medical Service Account reimbursement to BAMC.

According to the process stakeholders, current metrics can be utilized to measure the success of the process utilized to obtain and communicate valid information required to perform billing of professional services (A. Vegas and K. Armstrong, personal communication, January 20, 2005). As noted in the literature review, one of the most important steps to improving revenue cycle effectiveness is to obtain and properly enter accurate demographic and insurance information in the beginning of the process. The Emergency Department Coordinators' current goal is to initiate and timely submit 100% of the Other Health Insurance forms, Patient Admissions Records, as well as perform Mini-Registration for all patients. The success of Admissions and Dispositions Office regarding this process should be measured by the correctness and completeness of the admissions information in CHCS. Metrics regarding the success of the Uniform Business Office are discussed in the billing and collections sections below. Displayed in *Figure 7* (Appendix I), the reengineered patient intake process could have a significant impact on Medical Service Account reimbursement.

Another area of weakness in BAMC's current admissions process is that it allows a small number of patients to be admitted to medical residents (i.e., listing the resident as the attending physician). Generally, any professional services provided and documented while a patient is

admitted to a resident will not be reimbursed to a third-party payer. Even though medical residents are physicians, the standard of practice is to admit the patient to a supervising faculty member who will work with the resident. Although few patients are admitted to residents, the goal of maximizing third-party reimbursement can only be accomplished if BAMC implements a process in which controls are established where only medical education faculty and hospital staff have admitting privileges (D. Hunt, Coding and Compliance Analyst, and J. Norton, Auditor, personal communication, November 9, 2004).

Medical Documentation

After admission to BAMC, health services are provided for the patient. The physician is then required to document the care and his evaluation of the patient's condition. Brooke Army Medical Center's current medical documentation process is displayed in *Figure 7* (Appendix I). Medical documentation for civilian trauma patients is initiated by the trauma surgeons in BAMC's Emergency Department via the Clinical Information System—an electronic medical documentation system. Any professional services performed and/or documented in the Emergency Department are itemized billed as outpatient professional services in the Third-Party Outpatient Collection System. If the trauma patient is admitted to BAMC, the Emergency Department professional services cannot be billed along with the inpatient professional services (C. Ballard, personal communication, November 18, 2004). Separately billing for professional services provided in the emergency and inpatient area is compatible with standard civilian business practice (Wendy Funk, Analyst, Kennel and Associates, personal communication, February 8, 2004).

The proposed rules for the MHS's new Industry Based Workload Alignment (IBWA) program are intended to align military medicine workload accounting practices more closely

with those of civilian healthcare organizations, may change the way MTFs bill for Emergency Department and inpatient services. The Industry Based Workload Alignment program's business rules state that bills for services provided in the Emergency Department should be added into the inpatient admission and be billed as a single encounter (Unified Biostatistical Utility, 2004). Major changes will need to be implemented in CHCS before this type of billing is possible. The CHCS is engineered to present Emergency Department visits distinct and separate from inpatient admissions.

The professional services coding staff recognize that many of the physicians do not properly document the medical care that they render. Assuming that many of the BAMC physicians do not know how to properly document medical services and would do so if properly educated, a training program could potentially be provided to all physicians prior to them ever treating a patient at BAMC (D. Hunt, Coding and Compliance Analyst, and J. Norton, Auditor, personal communication, November 9, 2004). The trauma service medical documentation program could be developed utilizing Dr. Steve E. Wolf's program, "Coding for Burns" (2004) as a model. Dr. Wolf's program explains the basics of what coding is (International Classification of Disease (ICD-9) and Common Procedural Terminology (CPT)), why it exists, and how to receive credit for all of the medical services provided by properly documenting all professional care given. Dr. Wolf also explains different types of medical documentation (e.g., history and physical versus various medical procedures) and the requirements of each type. There are specific qualities expected to meet medical documentation standards and these qualities may vary by clinical procedure or service. To be coded properly, these documentation standards must be met. For instance, when a physician is performing an evaluation and management of a patient, he must document the amount of time spent evaluating diagnostic

information and communicating the information to the patient (D. Hunt and J. Norton, personal communication, December 13, 2004).

Many military physicians do not have a complete concept of their medical documentation's impact on the reimbursement process. When these physicians are no longer in the military, civilian payer organizations are going to expect them to properly document their professional services prior to paying for those services. The trauma surgeon might have some incentive to improve their documentation skills now—before their income is dependent on it. In addition, proposed implementation of the Prospective Payment System for the MHS will make medical documentation an even more important factor for MTFs to receive funding to operate. The Prospective Payment System will move the MTFs into performance-based budgets where they will only be able to keep the funding that is documented, coded, and properly billed (OASD(HA), 2004).

In addition to physicians being unaware of how to properly document medical care, many seem to be unaware of the rules relating to billing for the documented services of residents. The residents are documenting much of the medical care at BAMC (T. Mindingall, personal communication, November 3, 2004). In accordance with the Medicare medical documentation rules for reimbursement, only the documented services of the faculty or fully credentialed medical staff will be reimbursed (Centers for Medicare & Medicaid Services (CMS), 2002). In medical education programs, the faculty member is expected to participate in the care of patients and document that participation in the medical record. To satisfy this requirement, involvement in the medical procedures and rounds of the patient is mandatory. The faculty members are obligated to do more than co-sign or sign under the resident's documentation. Since most healthcare payer organizations follow the Medicare guidelines for reimbursement, the care

currently documented by BAMC's medical residents would not be reimbursable by practically any payer.

Faculty physicians at BAMC report that they are too busy to perform the quantity and quality of documentation to meet the standards. One possible solution is to construct standard documentation templates that can be utilized to more efficiently document the care that faculty members participate in (D. Hunt, personal communication, November 9, 2004). Although some medical documentation templates are in Clinical Information System, sufficient resources have not been dedicated to customize the templates for the medical documentation needs and preferences at BAMC (M. Dewitt, personal communication, December 3, 2004). Although it may take a large amount of time initially, a team consisting of medical coding staff, the trauma case managers, and the trauma surgeons should be able to generate adequate documentation templates for the trauma surgeons to utilize. While it may not be possible to document all procedures utilizing a template, documentation for the most common procedures could be somewhat standardized. The templates could be modified for the particular characteristics of a specific patient's procedure. The quantity of billable of trauma services, as well as quality of documentation, could significantly be improved by implementing a comprehensive list of trauma services templates. The lowered threshold of documentation for the physicians would also potentially provide an incentive for the physicians to improve their medical documentation (D. Hunt and J. Norton, personal communication, December 13, 2004).

In addition to the resident/faculty documentation and residents being listed as the attending physician, faculty members are not performing daily rounds on patients. As a part of the IBWA program, the MHS is implementing a process where all inpatients will have a visit automatically generated in CHCS for every day that they are in the hospital. The expectation is

that the physician will perform a ward round to evaluate all his/her patients on a daily basis. The electronic medical documentation from the visit will be coded and included in the Standardized Ambulatory Data Record—an MHS workload tracking report. The coding information will also be utilized to generate billing information for the professional services of BAMC's physicians. Although Bishop & Associates recommended utilizing Rounds cards for the surgeons to document their care, having the surgeons document their care directly into the information system would be the most timely. Additionally, documenting directly into the Clinical Information System would reduce the probability that the surgeon would have a transcription error from repeatedly documenting the care. Currently the only two areas at BAMC that the daily inpatient doctor visits are being coded for professional services are the Burn Unit and the Surgical Intensive Care Unit. The expectation is that in the future all BAMC inpatients will have a faculty and/or at least one fully credentialed staff physician perform a visit and document the professional services delivered during the visit.

Another problem in the documentation process is that paper copies of the dictated medical procedure notes are not being communicated to the coding staff. Many procedures are not coded because the paper dictation note is not placed in the record in a timely manner. If this problem is not corrected, BAMC's itemized billing process will be ineffective because no coding will occur to generate a bill for dictated services (D. Hunt and J. Norton, personal communication, December 13, 2004). A new process currently being implemented at BAMC may remedy this problem. The new process involves taking the dictated provider notes and electronically pasting them into the Clinical Information System. This would integrate the dictated notes with other medical documentation currently coded from information system. If properly implemented this process could improve the integration of information into the billing

process (J. Neal, Clinical Information Systems Manager, personal communication, February 17, 2005).

The metrics for determining the success of the medical documentation process were determined by the certified medical coders. The percentage of medical inpatients having proper daily medical documentation in the information system by a faculty or staff physician is the metric that certified coders would be one measure of the success of the documentation process. These coders would be required to assess the quality/quantity of the documentation. Even though the coders would be utilizing a somewhat subjective measurement, a minimum standard of knowledge would be utilized when performing the measurement due to the coders' certification. A feedback mechanism for providers who do not meet adequate documentation standards will be discussed in the coding section below. A reasonable goal for the documentation metric would be 100% of all medical documentation to meet the standards for quantity (i.e., at least daily visit) and quality (i.e. meeting all of the requirements for a particular type of documentation). Accuracy is essential because only properly documented and coded medical care can be billed. If the medical documentation is not sufficient to determine the procedure performed or does not match the diagnosis indicated, the coder will not be able to interpret what might have been intended. The coders should contact the physician and have him/her correct the documentation if it is incomplete or does not match the procedure or diagnosis.

The reengineered medical documentation process is presented in *Figure 9* (Appendix K). Even after redesign, the process will need be monitored and trouble areas will have to be addressed. Medical documentation monitoring and improvement is a significant part of Compliance Program for Third-Party Medical Billing—required for all healthcare providers

billing health insurance companies (Department of Health and Human Services, 1998). For instance, a group of trauma surgeons may perform very well in their duty to document medical care properly, but new faculty may not possess the documentation skills of the original physicians. All physicians will receive proper documentation training and will be monitored regarding the adequacy of their performance. The coding staff will perform audits of medical documentation and will provide feedback to the physicians regarding individual documentation performance (D. Hunt and J. Norton, personal communication, December 13, 2004). Currently the coding department staff members are having difficulty providing feedback to the physicians because the trauma physicians are never available to discuss documentation. One solution would be to have the trauma case managers, who work closely with both the coders and the physicians, provide the physicians with feedback (M. DeWitt, personal communication, December 3, 2004). Valid feedback presented in a more timely manner (e.g., in the patient care area) may have significantly higher probability of changing the physician's documentation habits.

Another method of changing the physicians' documentation procedures is to provide financial incentives to the physicians. Bishop & Associates (2004) recognized this as one of the major benefits of improving the billing and collection practices of the TRISAT members. Although direct payment to the military providers is prohibited, many MTFs are providing physician staff the incentive of allocating a percentage of the third-party collections to the clinical service billing for third-party reimbursement. Currently this is not an option because the command leadership does not support any incentives to clinical services from which third-party reimbursement is derived. All third-party reimbursement is placed into a general fund for allocation based on the funding needs as seen by BAMC's executive leadership (S. Cuda, personal communication, October 26, 2004).

Coding

Upon physician's completion of the medical documentation, it needs to be coded.

Coding the medical documentation places it in a standard language that billable charges can be referenced and healthcare payer organizations can understand. *Figure 10* (Appendix L) displays the current process of coding medical records at BAMC. Theoretically, there should be three different methods of professional services documentation received by the coding staff. The only two types of professional services documentation that are accessible to the coders are the medical documentation in the Clinical Information System and copies of the medical consult forms delivered to the coders. The third method, dictated procedure notes in the transcription system, is not usually available to the coders. As noted above the dictated procedure notes are usually integrated into the chart well after the coder has access to the chart. Additionally, the coders are not provided with any indication of which charts they should be searching for dictated notes.

Currently, the coding process begins with the production of the Admit/Discharge Roster through the CHCS Ambulatory Data Module (ADM). This report details all inpatient admissions and discharges to the MTF during a specified period. Displayed in *Figure 11* (Appendix M), the redesigned coding process introduces a more efficient method of producing this report. The CHCS could be instructed to automatically produce an admission and discharge roster every day. The report could then be automatically distributed to the coding staff so they will know which patient records to inspect for professional services documentation (D. Hunt and J. Norton, personal communication, December 13, 2004).

Another method of communicating professional services documentation to the coding staff members are the paper copies of consult notes. This method is problematic because the documented medical consult information is not reliably communicated from the physician to the

coding staff. For whatever reason, the consults are rarely received by the coding office, so very little consult information can be coded to generate a bill (D. Hunt and J. Norton, personal communication, November 9, 2004). Unless the medical documentation is properly coded, no bill can be generated from the Uniform Business Office.

The coder currently logs into the CHCS Ambulatory Data Module to enter codes for the professional services rendered to inpatients. The reengineered process will have the coders logging into the patient inpatient appointment in the Ambulatory Data Module. Documenting the coding according to the visit will more accurately reflect what professional services were delivered on specific dates. The current coding methodology only reflects the coding for the entire visit and does not break the work out to specific dates. The MHS guidance for coding is provided in the "Military Health system Coding Guidance: Professional Services and Specialty Coding Guidelines" (Department of Defense, 2005).

The coding staff members enter professional service codes for Common Procedural Terminology, Evaluation and Management, International Classification of Disease, and Healthcare Common Procedure Coding System. The Common Procedural Terminology codes are a numeric system developed and maintained by the American Medical Association to standardize the billing language for medical procedures. All of the codes have standardized definitions that the medical documentation must meet prior to being entered on a record. The coder cannot assume what the medical provider meant by his documentation. The coder can only code what the physician has documented. Many of the codes, including Common Procedural Terminology, reflect a relative intensity of resources (e.g., time, skill) utilized by the medical professional to perform the procedure (Yoder, 2002). If the medical documentation does not meet the requirements for a procedure code then the code is either omitted or possibly

reduced in the weight—signifying a lower amount of resources used. The Evaluation and Management codes are a subset of the Common Procedural Terminology codes where the provider has spent time reviewing diagnostic material for and/or with a patient and managing the care of the patient. The International Classification of Disease codes are diagnostic codes that must be congruent with the procedure codes. If the disease codes do not match the procedure codes, payer organizations will refuse to provide reimbursement for the care (D. Hunt and J. Norton, personal communication, November 9, 2004). The Healthcare Common Procedure Coding System is used to report and bill for services, supplies, and equipment (e.g., durable medical equipment, prosthetics) that cannot be identified by through the Common Procedural Terminology codes (Center for Medicare and Medicaid Services, 2005).

Bishop & Associates (2004a) made recommendations to BAMC for improving documentation and coding for trauma services and subsequently enhance its third-party reimbursement. Bishop stated that trauma services are different and these differences should be accounted for in the documentation and coding processes. For instance, the 22-modifier code for *trauma exploration* that can be appended to the primary procedure code might increase the reimbursement for a trauma surgical cases from 25 to 30%. Since the exploration is performed to determine the true nature of the traumatic injury prior to the primary procedure, it qualifies for additional reimbursement. To be eligible for this modifier, Bishop & Associates recommended certain qualities of documentation be present prior to utilizing the modifier (e.g., Utilize and elaborate on statement: “The patient’s previous scarring/major adhesions significantly complicated the procedure”; and documenting the difficulty and time the procedure took versus normally takes).

Since coding documentation for trauma patients is specific requirements from other medical documentation and has a high financial impact on a hospital's ability to bill for professional services, BAMC will institute specialization among the coding staff. Grouping various medical specialties under a single coder will assist the coders in getting to know the nuances of that particular group of specialties. In addition, the coders have a greater potential to develop better communication with the physicians if the physicians become are familiar with an individual rather than a revolving group of coders. There may be more buy-in for both the coders and the physicians. In addition, grouping specialties under a limited number of coders is a productive methodology for civilian companies billing for professional services (B. Guerra, Vice President for Patient Accounting, University Physicians' Group, personal communication, September 24, 2004). The BAMC coding staff agreed that grouping specialties under individual coders is a good method of assigning workload and gaining buy-in from the coding staff (D. Hunt and J. Norton, personal communication, November 9, 2004).

A positive aspect of BAMC's current revenue cycle is that the professional services coders are all certified coders. Having been through formal coding education and passing a certification examination, these coders bring credibility to the complicated medical coding process. In addition, when auditing coding accuracy, a certified coder possesses minimum standards of proficiency prior to performing the audit. As stated in the medical documentation section, it likely improves the quality of medical records audits as well (D. Hunt and J. Norton, personal communication, November 9, 2004).

The current medical coding process at BAMC requires communication of paper consult documentation and dictated procedures forms as well as electronic documentation in the Clinical Information System. The reengineered program would utilize integrated approach by ensuring

all medical documentation is entered into the information system. In addition, the coding staff is currently required to toggle their computer screens between the Clinical Information System and the CHCS's Ambulatory Data Module. As has become the standard practice at other healthcare facilities to improve workplace efficiency (e.g., University Health System, San Antonio, Texas), the coding staff should be provided with two computer screens—possibly requiring two computers. The staff will be able to code while reading the documentation. Coding efficiency could be significantly improved by this simple change. Even though there might be a significant investment to implement this redesign, the long-term improvements to the coding efficiency would provide a significant return on investment (D. Hunt and J. Norton, personal communication, November 9, 2004).

The metrics to measure the success of the coding process are partially a product of work efficiency and coding effectiveness. Regarding work efficiency, the coding supervisors at BAMC indicate that each coder should be able to accurately process 120 visits per 8-hour day. Less than one dedicated full-time equivalent (FTE) would be able to code the entire professional trauma services in less than the three-day window that coders are required to have the Rounds visits completed. When the coders are required to code the professional services of all the inpatient/outpatient professional services, more coders will be required (D. Hunt and J. Norton, personal communication, December 13, 2004). Coding accuracy is an additional measure of success of this process and an essential component of the BAMC Data Quality Program. The Data Quality Program requires BAMC to measure coding compliance of inpatient and outpatient services monthly and report the results to TMA (Department of Defense, 2002). The current goals (97%) for both metrics, reported in the monthly Army Data Quality Management Control Procedures Report, should be utilized as the goals for the redesigned coding process. Coding

accuracy is and will continue to be a highly scrutinized metric within the MHS (OASD(HA)), 2003).

Billing

After coding the medical documentation, a bill must be generated and sent to the healthcare payer organization. Brooke Army Medical Center's current billing process is displayed in *Figure 11* (Appendix N). Although industry standards are moving toward using electronic billing and information management, BAMC's current billing process relies heavily on manual processing of billing information.

The current Medical Service Account process begins with the production of the Invoice & Receipt by CHCS. This receipt currently has only global charges for healthcare services. The only accounting for inpatient professional services in the current MHS billing process is a flat 4% of the global rate that is allocated for professional services (Jennie Yoder, Program Manager, Uniform Business Office, TMA, personal communication, November 5, 2004). The rate of 4% remains the same regardless of medical specialty or procedure (C. Ballard, personal communication, November 18, 2004).

Upon coding professional services and implementing the MHS's Industry Based Workload Alignment (IBWA) program, MTFs will be able to generate separate itemized charges for facility and professional services categories. The IBWA program began three years ago to start moving the MHS's workload accounting to more closely resemble that of civilian healthcare organizations. Utilizing the processes indicated in the IBWA program, the MHS would begin to improve its accounting for workload by collecting individual Common Procedural Terminology and Healthcare Common Procedure Coding System codes for inpatient

services (Uniform Biostatistical Utility, 2003). The IBWA program will be a large part of implementing an itemized billing process for professional inpatient services in the MHS.

Even though this study relates to itemized billing procedures, many of the major procedures that surgeons perform are billed and paid under a professional service Diagnostic Related Group payment system. These bundled (i.e. all the professional services for a specific procedure) payments are associated with certain procedures and disease codes. This type of reimbursement is common in the healthcare industry for major medical procedures. This payment is to reimburse the provider for the procedure itself as well as inpatient medical management and usually at least two follow-up visits within the month after the patient is discharged from the hospital. The bills will break the professional services component out as an itemized charge, but the payment will be for the bundle of professional services provided. To properly bill for this type of service, the medical provider must document all of the care provided. The payer organization may request proof of documentation of medical care rendered by the physicians prior to reimbursing BAMC for the care rendered (C. Ballard, personal communication, November 18, 2004). The new billing methodology will be different from the current method of bundling all facility and professional fees into one charge. The new methodology—and current industry standard—is to bill a separate Diagnostic Related Group charge for both the facility and the surgeon. The Uniform Business Office will bill for all other physicians participating in the care of the patient (e.g., anesthesiologist, radiologist) as separate rate charges as well.

Bishop & Associates recommended that BAMC adjust its list of charges (i.e., chargemaster) to reflect professional services charges of other Level 1 trauma centers (Bishop, 2004a). No MTF, including BAMC, is currently eligible to determine its charge rate.

By law, the TRICARE Management Activity determines the charge rates for the military health system utilizing the methodology in Title 32 to the Code of Federal Regulations Part 199 (2004). It will also determine the chargemaster rates for inpatient professional services. The current rates only support global billing for facility and professional charges under a single rate.

The reengineered billing process is displayed in *Figure 12* (Appendix O). The process begins with verification of the patient's information that is required to properly bill for services by the Uniform Business Office. As discussed in the intake process, this information should be accurately identified and placed in CHCS as soon as possible upon a patient's admission to the hospital. Insurance companies require hospitals to contact them prior to admitting a patient and/or perform elective procedures. When a patient is admitted for a traumatic injury, payer organizations generally expect to be contacted within 48 hours after admission of the patient. Longer notification periods are sometimes allowed if the patient is unable to communicate or family members cannot be contacted. If the payer organizations are not contacted as soon as possible, they can refuse to pay for the patient's care (Ruth Spriggs, Director, Patient Billing Services, University Health System, personal communication, December 8, 2004). Additionally, many payer organizations encourage healthcare providers (facilities and physicians) to verify patients' insurance information and authorize services on-line. Although some insurance companies do not have the capability to provide on-line verification, utilizing it when it is available could improve the efficiency of BAMC's billing process. It may limit the amount of time that the business office staff are required to spend waiting on the telephone for the insurance company's staff to assist them.

The processes for billing self-pay patients—those patients without billable health insurance coverage—would essentially remain the same. The major difference in the current and

new billing processes for self-pay patients is that patients would receive an itemized bill for the professional healthcare services of BAMC's trauma surgeons. Military treatment facilities are already able to generate itemized bills for outpatient services through the Third-party Outpatient Collection System. Changing business practices to provide an itemized bill for inpatient services (facility and professional) would much more closely align BAMC with the standard billing practice in the healthcare industry.

The reengineered billing practice for insured patients would be significantly altered. The current process uses CHCS to generate the invoice and receipt form for both a self-pay and insured patients. The business office billing staff reviews all of the charge data on the invoice and receipt form and then manually enters the information into Third-Party Outpatient Collection System to generate a paper professional services charges form. The electronic Center for Medicare and Medicaid Services 1500 form (i.e., professional services charges) in Third-party Outpatient Collections System is deleted and the paper form is forwarded to BAMC's Medical Service Account Officer to review the bill for quality control. The billing staff then mails the paper bill to the third-party insurance organization (C. Ballard, personal communication, November 18, 2004).

The current billing process does not include explicitly informing all patients prior to discharge of their responsibility to pay for health services provided at BAMC. This potentially leads to some patients being surprised or reluctant to pay for these services. Since BAMC is a federal government facility, patients may believe that there is no duty to pay when a bill is received. Many of these patients have their indebtedness submitted to the Defense Finance and Accounting Service for further collection efforts if they fail to respond to BAMC's requests for payment or to the U.S. Army Medical Command to write off the indebtedness.

The new billing process will rely heavily on an electronic billing system to process claims. Electronic claims processing is standard practice in the healthcare industry and is supported by TMA (Office of the Chief Financial Officer, TRICARE Management Activity, 2005). Prior to the discharging the patient, the Uniform Business Office staff will inform him of his responsibility to pay should the insurance company not completely pay the hospital bill. After the patient's inpatient medical record is completely coded, the fields in CHCS that are required to complete the Center for Medicare and Medicaid Services form 1500 are exported from CHCS via an automated report (required fields are displayed in Appendix P (Office of the Chief Financial Officer, 2003)). The CHCS report will be exported as a flat file. The flat file will be imported into EPRIMIS, a National Data Corporation software program, and transferred to National Data Corporation via a secure internet connection. National Data Corporation will put the flat file information into a proper form for the Center for Medicare and Medicaid Services Form 1500 and evaluate it for HIPAA compliance (e.g., standardized codes and essential billing information) prior to submitting an electronic bill to payer organizations. As it does for outpatient itemized billing, National Data Corporation would serve as the automated clearinghouse for all inpatient trauma professional services billing (C. Ballard, personal communication, November 18, 2004).

Improving the efficiency of the electronic process, professional services bills could be sent earlier because there would be no need to wait for the facility portion to be coded and billed. In accordance with industry standards, regardless of whether facility and professional services are billed at the same time, separate bills will be sent each. Facility charges are billed on the Universal Billing Form 92 and professional services are billed on the Center for Medicare and Medicaid Services Form 1500 (R. Spriggs, personal communication, December 8, 2004). By

improving timeliness of the billing process through automated means, professional services can be billed significantly earlier than the 30-day time limit required for all BAMC inpatient billing.

The choice of which electronic billing system to utilize was analyzed closely prior to deciding that National Data Corporation's Third-Party Outpatient Collection System would be the choice for processing the electronic claims. The Bishop & Associates report recommended that BAMC should outsource the billing and collections function to an outside billing firm, such as University Physicians' Group. Bishop & Associates also recommended a consolidated billing process for the three Level 1 trauma centers in San Antonio. Consolidated billing did not have the support of BAMC's executive leadership for several reasons. First, no solid business case has been presented to the BAMC leadership showing that an outside firm can bill and collect for the third-party reimbursements better than BAMC is currently performing. Any outsourcing plan for BAMC must be associated with a strong business plan or it does not have much opportunity for being approved. Second, University Physician's Group does not have a sustained record of efficient and effective billing and collecting practices. It only collects 18% of billed charges (Bishop & Associates, 2004a). Third, if the billing and collections function for Medical Service Account moves outside BAMC, this competency will be lost to the BAMC staff. Many of the staff that are currently performing billing and collections functions would no longer be working in the Uniform Business Office. Furthermore, if the contracted firm did not perform to the level required, BAMC would not just be able to immediately start billing and collecting again or quickly switch to another billing firm because of the complicated nature of billing/collecting. Brooke Army Medical Center might potentially lose a significant amount of money while trying to get its billing and collections process working again. Insurance companies may not pay bills that are not submitted in a timely fashion. Until a solid business

case can be made to outsource billing and collections services, BAMC will continue to work on improving their internal billing and collecting processes.

In addition to the concerns regarding outsourcing, there has been significant concern from both of the military trauma centers' leadership regarding the flow of military third-party funds to a civilian organization. The potential hazards of mixing military health system funds with those of University Health System raised much concern. These leaders were not convinced that a justifiable business plan or legal issues could be properly handled with respect to a consolidated billing program (T. Mindingall, personal communication, November 5, 2004).

The choice whether to utilize National Data Corporation or SSI Group to process electronic bills is another heavily scrutinized decision. Due to several factors, National Data Corporation was chosen. First, National Data Corporation's system, an add-on module to the Third-party Outpatient Collection System, is certified through the DoD Information Technology Security Certification and Accreditation Process (DITSCAP) and SSI Group's product is not (C. Ballard, personal communication, November 18, 2004). All DoD information system solutions must undergo this rigorous and time-consuming certification process prior to implementing the system. A part of the acquisition process, the DITSCAP forces governmental agencies to evaluate all new purchases of information management resources for security and capacity for integrating with current systems (DoD, 1997). If BAMC decides to utilize the SSI Group solution, a significant amount of time will elapse before the system is certified. Second, National Data Corporation's product, the Third-party Outpatient Collection System, is already being utilized by BAMC to bill third-party payers for outpatient services. By adding the module to the Third-party Outpatient Collection System, BAMC would be able to begin utilizing the new

professional services billing process with minimal training for the new process (C. Ballard, personal communication, November 18, 2004).

Third, utilizing National Data Corporation would minimize the cost of implementing and operating the new professional services billing process because no new hardware would be needed. In addition, National Data Corporation has already negotiated a rate of 15 cents to process each claim—price of add-on module and contract will still need to be negotiated. Since BAMC would be the first MTF to implement this type of system, it would probably be able to negotiate a favorable contract to purchase the software add-on as well. If BAMC is successful in implementing the new process, National Data Corporation might be able to market the software add-on to all other MTFs. If BAMC utilizes SSI Group for its billing solution, a significant amount of hardware and software will need to be purchased because the SSI Group system will not be compatible with BAMC's current third-party billing system. Regardless of the choice, since BAMC would be the test site for this capital venture, it might be able to obtain outside funding (e.g., TMA or Army Medical Department) to proceed with the project. Funding for the venture is not in the current BAMC budget (C. Ballard, personal communication, November 18, 2004).

Upon implementation of the billing process, several metrics can be utilized to measure its successfulness. A metric supported by both by BAMC's Uniform Business Office and Bishop & Associates is the total dollar amount of billed charges—a common measure of billing success among civilian billing organizations (C. Ballard, personal communication, November 18, 2004 and Bishop & Associates, 2004a). While Bishop recommended other metrics for the billing process, the remaining measures are more related to the collections process and will be discussed in the next section. In addition to the amount of billed charges, the business office would

measure and improve its performance by measuring and tracking the percent of inpatient claims filed within 30 days after the patient has been discharged, the percent of claims rejected due to billing errors, and the number of claims processed per day. Since BAMC has had difficulty in just getting bills sent to payer organizations in a timely fashion (Bishop, 2004a), these metrics would support process improvement efforts for billing.

Collections and Denials Management

After a bill has been submitted to an insurance company, the collections and denials management process is utilized to collect and follow-up regarding reimbursement for the accounts receivables. The billing and collections and denials management processes overlap because the business office performs both functions. Special care is given to keep certain functions separate to maintain internal control of the revenue cycle process. For example, the person billing the individual or company is not supposed to receive the payment. Again, the current collections and denials management process (*Figure 13, Appendix Q*) is almost entirely managed via manual processing of information. When an insurance company is billed, the healthcare provider should expect to be paid within 30 days after the company receives the claim. Payment from both patients and insurance companies generally arrive to the business via mail. The Medical Service Account Officer records the payments in the Medical Service Account logbook. Copies of the checks are then forwarded to the collectors to reconcile the billed amount versus the paid amount. The original checks go to the Accounting Department to be recorded and deposited.

The denials process is basically the same for patients who are billed directly for the care (i.e., self-pay) and the insurance companies who are billed. If a claim is denied or not fully paid within 30 days and then 60 days, the billing staff follow up via mail with the insurance

organization and the individual having received care (whether self-pay or insured). After 90 days, the Uniform Business Office staff refers the patient's indebtedness to collections—the patient is ultimately responsible for resolving the debt. If the individual and/or insurance company makes a valid attempt to work with BAMC's Medical Service Account Officer to resolve the debt, extensions of time can possibly be granted before the debt is turned over to collections. When a determination has been made to submit the indebtedness information to collections there are two different collection agencies. If the amount is less than \$225, the indebtedness information is sent to the Army Medical Command and if it is greater than \$225, the amount is referred to the Defense Finance and Accounting Service (C. Ballard, personal communication, November 15, 2004).

The new process (*Figure 14*, Appendix R) will rely much more heavily on an automated process because most bills will be submitted via electronic claims submission. The implementation of an automated clearing house to collect the check and electronic deposits is central to improving the efficiency of BAMC's collections process is. The automated clearing house (or lockbox) is an account with an authorized domestic financial institution that receives all bill payments regardless of the payment source or method. Electronic deposits will be directly deposited to BAMC's account. Paper checks are scanned by the financial institution and electronically transmitted and collected through the Federal Banking System. Utilizing the ACH will not only improve the efficiency of BAMC's billing and collections program, it will also strengthen the organization's financial internal controls. Having an independent agency receive and record payments removes that responsibility from the business office. As a matter of internal control, the billing organization should not be in charge of collecting the funds. In addition, lockboxes are becoming standard for both healthcare institutions and physician billing

organizations (Sherry Johnson, Internal Auditor, University Health System, personal communication, February 17, 2005). The Department of Treasury (2003 and 2004) has provided regulatory guidance for Federal Government Agencies seeking to utilize automatic clearing houses to improve the efficient flow of funds into the agencies.

In addition to improving the efficiency of funds flow, the financial institution will communicate essential information to the MTF within 24 hours of having received it. The financial institution will scan all paper checks and explanation of benefits forms transmitted to it by the payer organization and forward the information to the MTF via a secured internet connection. The flow of information will be seamless because it can be designated to go to more than one individual or department in a single communication. Checks will not need to be transferred around BAMC before being deposited. Utilizing the lockbox technology could create a more transparent and timely view of its accounts receivable.

Many of BAMC's trauma patients have Health Maintenance Organizations and Preferred Provider Organizations insurance which are subject to Texas Prompt Payer laws. These laws require these two types of healthcare payers to expedite payment of all clean claims submitted within 45 days of receipt. A clean claim is defined as a bill meeting all of the data elements required by HIPAA. If further information is required to determine whether a liability is owed the physician, the health maintenance organizations and preferred provider organizations generally have to respond to the request for payment within 30 days. If the payer is not an maintenance organizations or preferred provider organization the Texas Prompt Pay laws do not apply (Pyatt & Karam, 2004). Subsequently, obtaining reimbursement from these payers may be more difficult and may require more help from the insured individual to ensure proper reimbursement.

If BAMC were to group the billing staff and collections and denials management staff by payer (e.g., private insurance, Health Maintenance Organization, Preferred Provider Organization, Medicare/Medicaid) and/or patient (e.g., trauma) types, it would allow the staff to be more knowledgeable regarding the nuances of reimbursement for patients in certain situations. Using this method of grouping workload would potentially increase reimbursement to BAMC. Other healthcare facilities use specialization to maximize the effective utilization of billing and collections resources (R. Spriggs, personal communication, December 8, 2004).

Both BAMC's Uniform Business Office and Bishop & Associates recommended metrics for measuring the successfulness of the collections process. They both agreed that the total dollar amount reimbursed and the percentage of billed charges collected are essential to monitoring and improving the collections process (C. Ballard, personal communications, November 18, 2004 and Bishop & Associates, 2004a). In addition to these metrics, industry standards suggest that billing organizations monitor their aged accounts receivables as well. Aged accounts receivable would detail the dollar amount of bills for service that are due to BAMC that remain outstanding for extended periods (i.e., 45, 60, and 90 days). To examine whether the physicians' specialties affect collections, this measure could also be stratified by clinical area (R. Spriggs, personal communication, December 8, 2004). These metrics are not just measures of the collections process but also measures of the total revenue cycle process because all of the sub-processes have input on the ultimate results of collections.

Discussion

Although the results of this study suggest a functionally designed process, several factors might hinder optimal performance of the revenue cycle process for the professional services of the BAMC trauma surgeons. First, ownership for the revenue cycle is split between several

different organizational Chiefs (Resource Management Division, Patient Administration Division, Healthcare Operations, Emergency Medicine Division, Department of Emergency Medicine). In addition, the Director for the Trauma Division has significant influence over the treatment and documentation process for the medical providers. If these areas do not work proactively and cooperatively with each other, the new process has little opportunity for improving Medical Services Account reimbursement for trauma care. A renewed emphasis by the Deputy Commanders' of Clinical Services and Administration highlighting cooperation and proactive engagement for implementing and improving the revenue cycle process could potentially foster a successful revenue cycle.

In addition to gaps in the ownership of revenue cycle processes, BAMC may have to deal with the problems associated with change in a bureaucratic organization. Altering current processes may be difficult and require tact in managing the change process. Although proceeding slowly when implementing change may be good, many military organizations have significant resistance to change that may further slow any advance in implementation.

Assumptions

In addition to the organizational factors that might hinder the performance of the revenue cycle processes, several assumptions are built into the redesigned revenue cycle process. Errors in these assumptions could be detrimental to the successful function of the revenue cycle as well. The first assumption is that TMA will allow and encourage the new itemized billing of professional inpatient services. Other than providing guidance regarding the Industry Based Workload Alignment program, this assumes that the process design will be determined by the MTF. The TRICARE Management Activity could prescribe elements of the design not considered in this report. Another assumption is that the recording of billing and demographic

information can be improved, which will result in more valid information being utilized in the billing process. In turn, improved information is assumed to enhance the level of reimbursement for trauma services.

A third assumption of this design is that current BAMC staffing levels will support the operation of the new process. The BAMC Emergency Department Coordinators know that they have the primary responsibility for obtaining demographic and insurance information. The Emergency Department Coordinator Supervisor, Al Vegas (personal communication, January 20, 2004), states that the current staffing level for the coordinators is satisfactory to meet the information needs of the revenue cycle process. Bishop & Associates (2004a) recommended staffing levels for a consolidated billing process for the three trauma centers—4000 yearly trauma cases. These staff included a billing manager, a certified procedural coder, 2-3 billing representative, 3-4 collection representatives, and 2-3 data entry/payment posting coordinators. Between the Healthcare Operations Division and the Uniform Business Office, these staff members are already present at BAMC. The assumption includes that by producing improved efficiency and effectiveness, the overall workload level will not proceed above current staffing abilities.

A fourth assumption is that the cost of resources to implement the program would be minimal and potentially be borne by venture capital funding from either the Army or the TMA. The major proposed cost would be for the purchase of National Data Corporation's EPRIMIS software program to convert inpatient professional services into a Center for Medicare and Medicaid Services Form 1500. As a part of the investment capital process, an acquisition review may be required under the Clinger Cohen Act. This Act requires all Federal Government Agencies to treat the acquisition of information management resources as a capital investment

and evaluate all of these resources for potential return on investment. Only systems with a positive return on investment should be considered. In addition, the Act requires that all new information management resources have the ability to be maximally integrated with current systems and are in coordination with the agencies Chief Information Officer (National Defense Authorization Act, 1996). If other competing projects are deemed to be more important, the funds for this project may be allocated to other priorities.

A fifth assumption is that for both the billing and the collections processes is that the electronic billing and collecting methods will be embraced by healthcare payer organizations and the military health system. Although many payer organizations have begun to utilize electronic billing technology and the market and regulatory incentives to process electronic bills, some have not. In addition, no MTF has begun to utilize the automated clearing house method of processing collections. Although outpatient bills are currently processed electronically, all collections are processed via paper check. The TRICARE Management Activity has not issued guidance related to the use of automated clearing houses by military healthcare organizations.

Conclusion

The results of this research partially support the first proposition of an accomplishable and seamless process designed to efficiently and effectively obtain third-party reimbursement for the professional services of trauma surgeons delivering care in MTFs. The results of this research do not support the second proposition. There are significant legal barriers that prevent the implementation of a process to obtain itemized reimbursement from third-party payers for the professional services of physicians delivering care in MTFs. In addition to the documents referred to in this report, a detailed list of all individuals interviewed for this research is listed in Appendix S.

This study identifies a best practice process to collect revenue from third-party insurance for the professional services of BAMC's trauma surgeons. Convergent data were identified in many different areas that support an efficient and effective method of billing for the professional services of BAMC's trauma surgeons. Currently this process is not accomplishable due to regulatory restrictions by TMA to delay implementation of inpatient itemized billing. Although the results partially support one proposition, while not supporting the other, there is value in designing a process prior to having authorization to implement it. There were certain aspects that are specific to a MTF, but much of this process is inherently the same as that of a civilian professional services billing process. The MHS is moving toward the methodology utilized by civilian healthcare industry to account for workload and billing for services.

Implications and Further Study

There are several utilities for the results of this study. First, BAMC now has a process identified for increasing its revenue from trauma services. By increasing revenue from trauma services, BAMC will be better able to support the trauma system in South Texas and benefit the Army. Even though any improved reimbursement from trauma services does not directly effect the trauma program funding, a more financially sound BAMC is better able to support the expensive nature of delivering trauma services. Additionally, now that BAMC knows some of the significant barriers to implementing a professional services billing process, it can prioritize them and evaluate how it evaluates each should be handled. For instance, going into this study a major assumption was that the revenue collected from the services of the trauma surgeons will largely be reinvested in the trauma program. Although the trauma program's leadership realizes that there is currently little support for an incentive program to increase reimbursement, they may want to address this issue prior to BAMC's implementation of the reengineered revenue

cycle process. Another benefit of designing this process has been the discovery of problems in the current revenue cycle processes that can be addressed independent of implementing the itemized billing program.

In addition, designing a procedure for billing for the professional services of the trauma surgeons may enable BAMC to cope better with the eventual implementation of inpatient-itemized billing. Certain factors from this study can be utilized when adding other medical specialties to the process. Adding other medical professionals to the process may actually have a greater impact on BAMC's revenue because other medical specialties might bring greater amounts of reimbursement than the trauma surgeons can (Rogers, Osler, Shackford, Healey, & Wells, 2003). A third utility of the results of this study will be to guide other MTFs in designing a program seeking third-party reimbursement for physician professional services. Although the exact design may not be reproducible, an MTF could apply many of the contextual pieces of this process.

Considering the results of this study, further research might be performed to explore several issues. Since the MHS is beginning to move its workload accounting and billing practices to those of civilian firms, additional research might be performed to evaluate the incentives that civilian organizations are providing for their members (doctors, clerks, business and billing office staff) of the revenue cycle team. Knowing how other high-performing organizations provide incentives for their staff to achieve performance goals might lead to improved revenue cycle performance in the MHS. Other research might be performed to evaluate change management when the itemized billing process is eventually implemented. There will probably more contextual factors that develop during the course of implementing this process than were discussed in this study.

References

- Atchison, K. (2003). Surefire strategies to reduce claim denials. *Healthcare Financial Management, 57*(5), 54-58.
- Biffl, W. L., Moore, Ernest, E. E., Offner, P. J., Franciose, R. J., Johnson, J. L., & Burch, J. M. (2002). The outreach trauma program: A model for survival of the academic trauma Center, *The Journal of Trauma 52*(5), 840-846.
- Bennis, W. G., Benne, K., & Chin, R. (1969). *The Planning of Change*. New York: Holt, Rinehart and Winston, Inc.
- Bishop & Associates. (2004a). *TRISAT physician billing report*. Unpublished Consulting report to Trauma Institute of San Antonio (TRISAT). Obtained from Sharon Smith, TRISAT Project Coordinator.
- Bishop & Associates. (2004b). *TRISAT project, Brook Army Medical Center: 2003 potential financial performance*. Unpublished consulting report to the Trauma Institute of San Antonio (TRISAT). Obtained from Sharon Smith, TRISAT Project Coordinator.
- American College of Surgeons, Committee on Trauma. (1998). *Resources for the optimal care of the injured patient: 1999*, American College of Surgeons. Chicago, IL.
- Center for Medicare and Medicaid Services (CMS). (2002). *Medicare carriers manual: Part 3 – Claims Process* (CMS Pub. 14-3). Retrieved February 16, 2005 from http://www.cms.hhs.gov/manuals/pm_trans/R1780B3.pdf
- Center for Medicare and Medicaid Services (CMS). (2003). *Medicare Claims and Processing Manual* (CMS Pub. 100-04). Retrieved September 24, 2004 from http://www.cms.hhs.gov/manuals/104_claims/clm104c03.pdf

Center for Medicare and Medicaid Services (CMS). (2005). *Medicare program: procedures for coding and payment determination for clinical laboratory tests and for durable medical equipment*. Retrieved February 17, 2005 from

<http://www.cms.hhs.gov/medicare/hcpcs/codpayproc.asp>

County Indigent Health Care Program, Exclusions and limitations. (2004). 25 Texas Administrative Code §14.202. Retrieved September 24, 2004 from

<http://www.tdh.state.tx.us/cihcp/default.htm>

Department of Defense Appropriations Bill, 2005. House Rpt. 108-553. Retrieved on October 2, 2004 from [http://thomas.loc.gov/cgi-](http://thomas.loc.gov/cgi-bin/cpquery/?&db_id=cp108&r_n=hr553.108&sel=TOC_418359&)

[bin/cpquery/?&db_id=cp108&r_n=hr553.108&sel=TOC_418359&](http://thomas.loc.gov/cgi-bin/cpquery/?&db_id=cp108&r_n=hr553.108&sel=TOC_418359&)

Department of Defense. (1997). DoD information technology security certification and accreditation process (DITSCAP), (DoD Instruction No. 5200.40). Retrieved February 21, 2005 from <http://iase.disa.mil/ditscap/>

Department of Defense. (2002). Military health system data quality management control procedures, (DoD Instruction No. 6040.40). Retrieved February 18, 2005 from <http://www.dtic.mil/whs/directives/corres/pdf2/i604040p.pdf>

Department of Healthcare Operations, Brooke Army Medical Center. (2004). *Emergency department coordinator patient business team responsibilities and procedures*. Obtained from Cynthia Worl, Data Analyst, BAMC, Cynthia.Worl@CEN.AMEDD.ARMY.MIL on December 3, 2004.

Department of the Treasury. (2003). Deposits in lockbox accounts at authorized domestic depositories, *Treasury Financial Manual*, 5(8). Retrieved February 21, 2005 from <http://www.fms.treas.gov/tfm/vol5/>

- Department of the Treasury. (2004). Federal government participation in the automatic clearing house, *Federal Register* 69(54). Retrieved January 19, 2005 from <http://www.fms.treas.gov/ach/>
- Eastman, A. B., Bishop, G.S., Walsh, J. C., Richardson, J.D., Rice, C. L. (1994). The economic status of trauma centers on the eve of health care reform. *Journal of Trauma*, 36(6), 835-846.
- Fath, J. J., Ammon, A. A., Cohen, M. M. (1999). Urban trauma care is threatened by inadequate reimbursement. *The American Journal of Surgery*, 177(5), 371-374. Retrieved July 29, 2004 from <http://gateway2.ovid.com>
- Hart, A.C. & Hopkins, C. A. (2004). ICD-9-CM Professional: For Physicians (6pth ed.). Eden Prairie, MN, St. Anthony Publishing.
- Health Care Services Incurred on the Behalf of Covered Beneficiaries: Collection from Third-party payers. Per 10 USC §1095 (2002). Retrieved September 24, 2004 from <http://www4.law.cornell.edu/uscode/10/1095.html>
- Institute of Medicine. (2000). *America's health care SAFETY NET*. Washington, DC: National Academy Press. Retrieved September 27, 2004 from <http://www.nap.edu/>
- Laforge, R. W., & Tureaud, J. S. (2003). Revenue-cycle redesign: Honing the details. *Healthcare Financial Management*, 57(1), pg. 64-71.
- Malhotra, Y. (1998). Business process redesign: An overview, *IEEE Engineering Management Review*, 26(3). Retrieved September 28, 2004 from <http://www.brint.com/papers/bpr.htm>

Making Appropriations for the Department of Defense for the fiscal year ending

September 30, 2002, and for other purposes. (2001). *Conference Report 107-350*

to Accompany H.R. 3338. Retrieved September 28, 2004 from

<http://www.tradoc.army.mil/cong/Publications/FY02%20Def%20App%20Joint%20Conf%20Rpt%20107-350.pdf>

Medicaid Health Services: Provider participation requirements. (2002). 1 Texas

Administrative Code §354.1077. Retrieved September 25, 2004 from

[http://info.sos.state.tx.us/pls/pub/readtac\\$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=1&pt=15&ch=354&rl=1077](http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=1&pt=15&ch=354&rl=1077)

Medicaid Health Services, Purchased health services: General administration. (2002). 1

Texas Administrative Code, §354.1149. Retrieved September 25, 2004 from

[http://info.sos.state.tx.us/pls/pub/readtac\\$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=1&pt=15&ch=354&rl=1149](http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=1&pt=15&ch=354&rl=1149)

Military-civilian health services partnership program. 10 USC §1096 (1994). Retrieved

September 22, 2004 from <http://www4.law.cornell.edu/uscode/10/1096.html>

National Defense Authorization Act, 1996. P.L. 104-106. Clinger Cohen Act. Retrieved

February 22, 2005 from

<http://www.tricare.osd.mil/imtr/ppm/documents/clingercohen.pdf>

National Foundation for Trauma Care. (2004). U.S. trauma center crisis: Lost in the

scramble for terror resources. Unpublished report released in May, 2004.

Retrieved August 24, 2004 from

http://www.traumacare.com/NFTC_CrisisReport_May04.pdf

Office of Inspector General, Department of Health and Human Service. (1998). Publication of the OIG compliance program guidance for third-party medical billing companies, *Federal Register*, 63(243). Retrieved February 18, 2005 from <http://oig.hhs.gov/>

Office of the Assistant Secretary of Defense (Health Affairs), Department of Defense. (1997). *Military treatment facility: Uniform business office (UBO) Manual* (Defense Publication No. 6010.10-M). Retrieved September 24, 2004 from <http://www.dtic.mil/whs/directives/corres/html/601015m.htm>

Office of the Assistant Secretary of Defense (Health Affairs), Department of Defense. (2002a). Allowable Charges: CHAMPUS maximum allowable charges (CMAC). *TRICARE Reimbursement Manual 6010.55-M*, Chapter 5 Section 2, 1-6. Retrieved September 24, 2004 from <http://www.tricare.osd.mil/TRICAREManuals/tr02.htm>

Office of the Assistant Secretary of Defense (Health Affairs), Department of Defense. (2002b). Collection from third party payers of reasonable charges for health care services, 32 CFR 220. *Federal Register*, 67(177). Retrieved September 24, 2004 from http://www.access.gpo.gov/su_docs/fedreg/a020912c.html

Office of the Assistant Secretary of Defense (Health Affairs), Department of Defense. (2003). *Initial coding accuracy report of audit contractor*. Retrieved February 18, 2005 from http://tricare.osd.mil/rm/fa_dq_audit_reports.cfm

Office of the Assistant Secretary of Defense (Health Affairs), Department of Defense. (2004). *Implementation of prospective payment system*. Retrieved February 23, 2005 from <http://www.ha.osd.mil/policies/2004/04-014.pdf>

Office of the Chief Financial Officer, TRICARE Management Activity. (2005). *Itemized billing*. Retrieved February 20, 2005 from

http://tricare.osd.mil/rm/ubo_itemized_billing.cfm

Office of the Chief Financial Officer, Uniform Business Office, TRICARE Management Activity. (2003). Functional business rules for itemized billing. Retrieve February 21, 2005 from http://tricare.osd.mil/rm/ubo_policy_and_guidance.cfm

Office of the Secretary of Defense. (2004). Civilian Health and Medical Program of the Uniformed Services (CHAMPUS), 32 *CFR* 199. Retrieved on February 22, 2005 from <http://www.gpoaccess.gov/index.html>

Patton, M. Q. (1989). *Qualitative Evaluation and Research Methods* (2nd ed.). Newbury Park, CA: Sage Publications.

Procedures for charging fees for care provided to civilians; retention and use of fees collected. 10 USC §1079b (2001). Retrieved September 22, 2004 from <http://www4.law.cornell.edu/uscode/10/1079b.html>

Pyatt, K. & Karam, M.E. (2004). Maximizing reimbursement under Texas prompt pay laws, *Health Brief* (Winter 2004). Retrieved on February 21, 2005 from <http://images.jw.com/com/publications/379.pdf>

Rappuhn, T. A. (2003). The revenue cycle from the patient's perspective. *Healthcare Financial Management*, 57(9), 64-70.

Rogers, F. B., Osler, R., Shackford, S. R., Healey, M. A., Wells, S. K. (2003). Charges and reimbursement at a rural Level I trauma center: A disparity between effort and reward among professional, *The Journal of Trauma*, 54(1), 9-15.

Selzer, D., Gomez, G., Jacobson, L., Wischmeyer, T., Sood, R., & Broadie, T. (2001).

Public hospital-based Level I trauma centers: Financial Survival in the new millennium, *The Journal of Trauma*, 51(2), 301-307.

Testimony of Donald N. Blanding. (2003). Before the House Subcommittee on Oversight

Investigations of the House Veterans' Affairs Committee, Wednesday, May 7, 2003.

Retrieved on October 11, 2004 from

<http://veterans.house.gov/hearings/schedule108/may03/5-7-03/dblanding.html>

Texas Health and Human Services Commission. (2003). *2004 Texas Medicaid Provider*

Procedures Manual.

Trauma Institute of San Antonio (TRISAT). (2003). Trauma Institute of San Antonio,

Texas: Organizational Principles, Unpublished document retrieved September 2,

2004 from Sharon Smith, TRISAT Project Coordinator, smiths6@utscsa.edu

TRICARE program: Financial management. (1999). 10 USC 1097b(b). Retrieved

September 24, 2004 from <http://www4.law.cornell.edu/uscode/10/1097b.html>

Two emergency rooms in Los Angeles close under the strain of the uninsured.

(2004 August 23). *Wall Street Journal*, Retrieved August 26, 2004 from

<http://online.wsj.com/article/0,,SB109322493785198212,00.html>

Unified Biostatistical Utility, TRICARE Management Activity. (2003). *Industry based workload*

alignment. Obtained from Thomas Mihara, CDR, USN, Thomas.Mihara@tma.osd.mil

on November 5, 2004.

Unified Biostatistical Utility, TRICARE Management Activity. (2005). *Military health system*

coding guidance: Professional services and specialty coding guidelines, Version 1.0.

Retrieved February 21, 2005 from <http://www.tricare.osd.mil/org/pae/ubu/default.htm>

- U. S. Army Medical Command. (2001). *Medical service accounts: User's manual*. Retrieved November 19, 2004 from <https://pad.amedd.army.mil/>
- United States General Accounting Office. (1991). *Trauma care: Lifesaving system threatened by unreimbursed cost and other factors*. (GAO Publication No. HRD-91-57). Retrieved on September 22, 2004 from <http://161.203.16.4/d20t9/143946.pdf>
- United States General Accounting Office. (1995). *State Trauma Grants*, (GAO Publication no. HEHS-95-105R). Retrieved September 22, 2004 from <http://161.203.16.4/paprpdf1/154011.pdf>
- United States General Accounting Office. (1997). *Business Process Reengineering Assessment Guide, Version 3*, (GAO Publication No. GAO/AIMD-10.1.15).
- United States General Accounting Office. (2002). *Military treatment facilities: Internal control activities need improvement*, (GAO Publication No. GAO-03-168). Retrieved July 27, 2004 from <http://www.gao.gov>
- United States General Accounting Office. (2004). *Military treatment facilities: Improvements needed to increase DoD third-party collections*, (GAO Publication No. GAO-04-322R). Retrieved July 20, 2004 from <http://www.gao.gov>
- Wolf, S. E. (2004). *Coding for burns*. An educational program delivered via PowerPoint to the medical staff of BAMC's Burn Unit. Obtained from Monica DeWitt, Trauma Division Program Manager, Monica.Dewitte@CEN.AMEDD.ARMY.MIL , on February 16, 2005.
- Yin, R. (2003). *Case Study Research: Design and Methods* (3rd ed.). Thousand Oaks, CA: Sage Publications.

Yoder, J. (2002). *Using coding data to make decisions*. Presentation at the 2002 TRICARE Europe Annual Conference. Retrieved July 14, 2004 from <http://www.tricare.osd.mil>

Appendix A

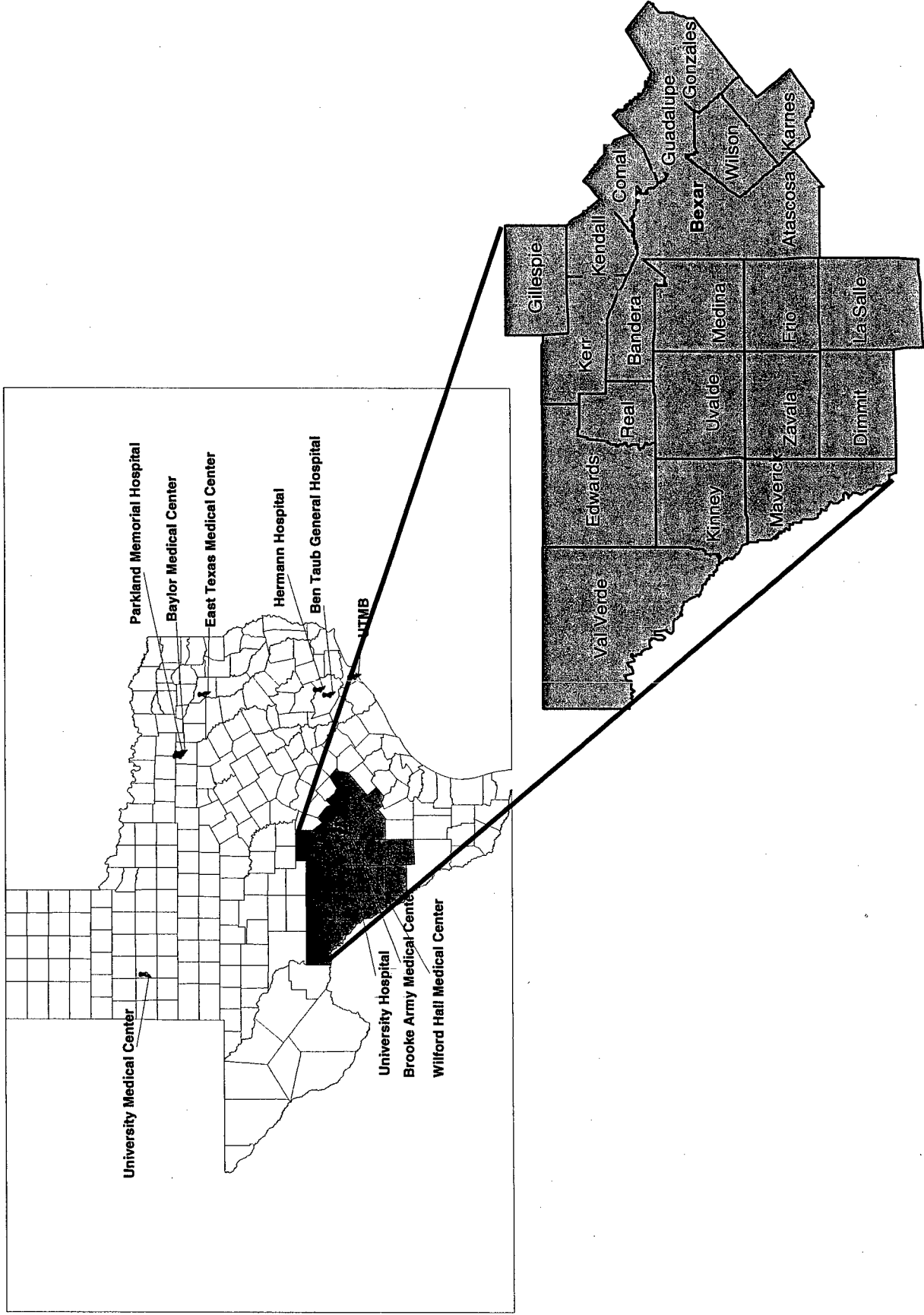


Figure 1. Texas Level 1 trauma centers (Shaded region indicates Trauma Service Area P)

Note. Figures presented by permission of University Health System, San Antonio, Texas

Appendix B

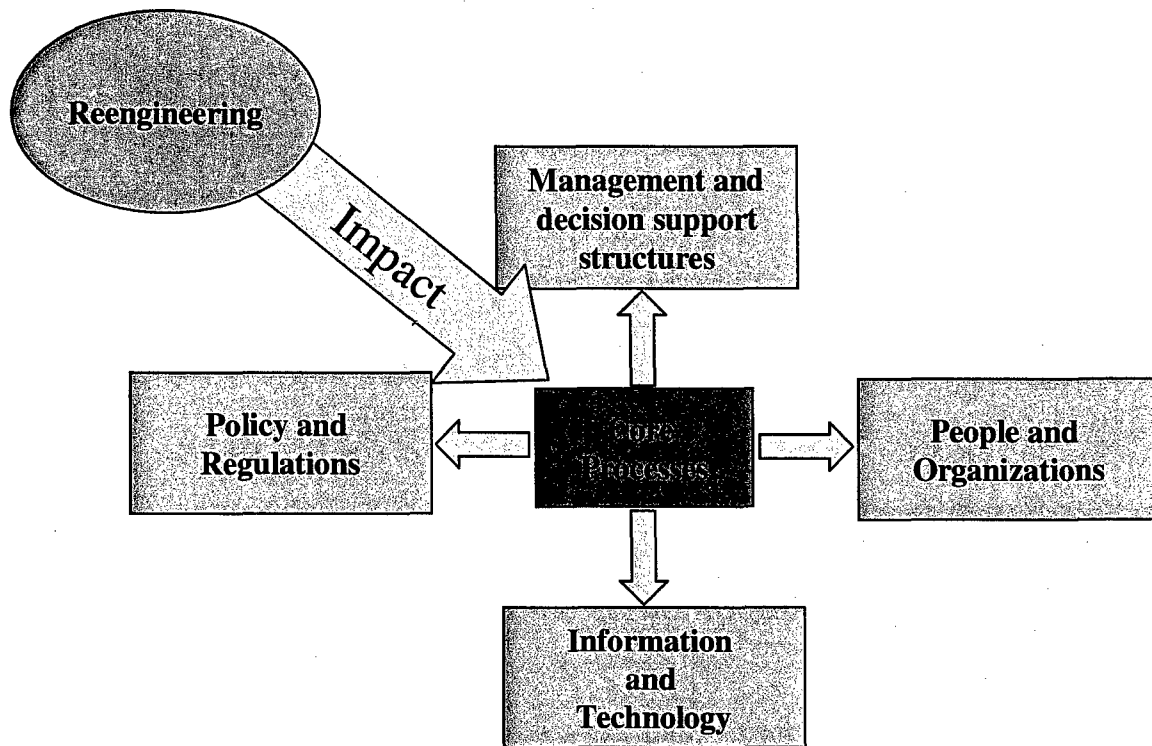


Figure 2. Impact on organizational processes¹

¹From "Business Process Reengineering Assessment Guide," Version 3, by the U.S. General Accounting Office, 1997.

Appendix C

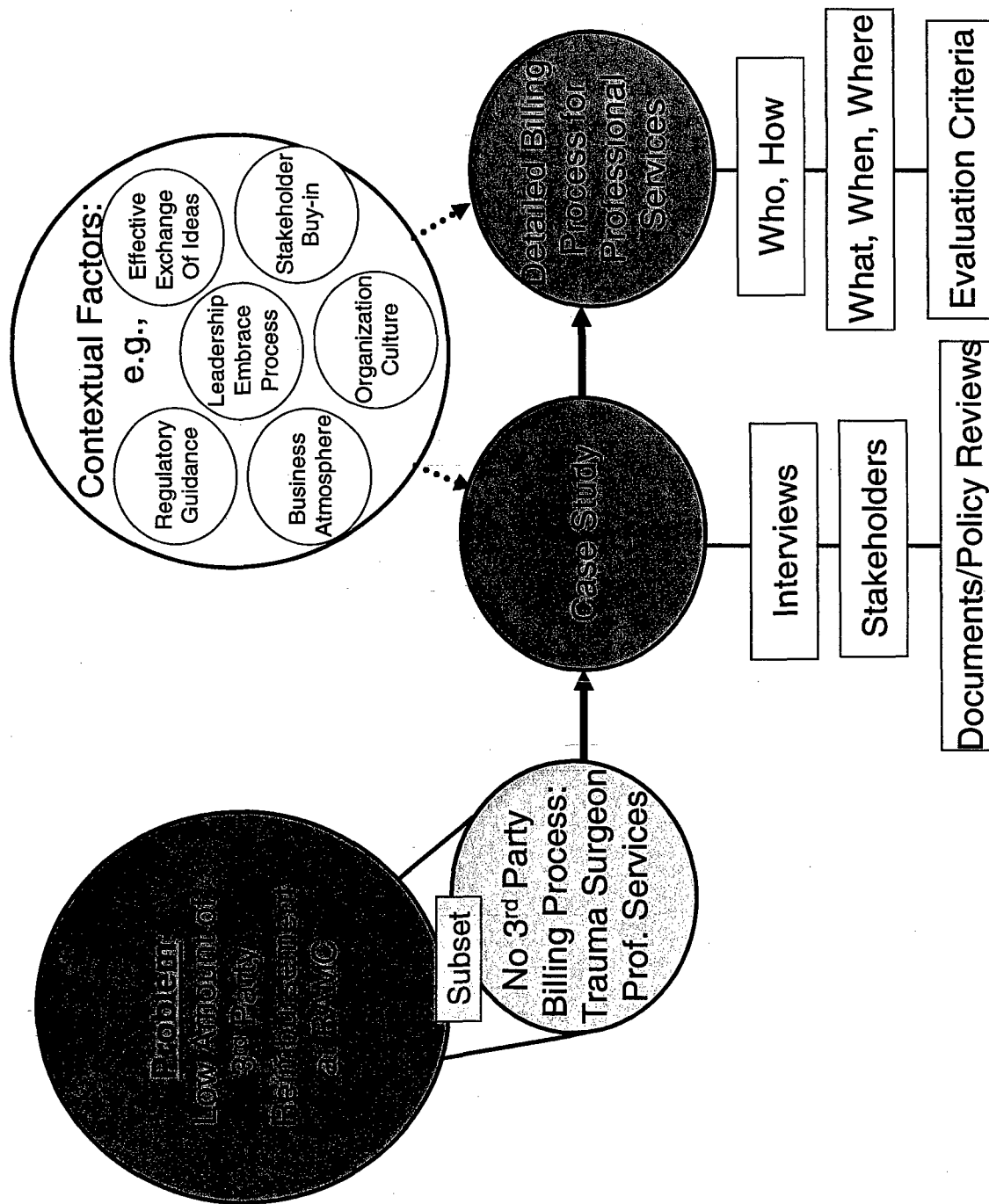


Figure 3. Conceptual model for designing a professional services billing process for BAMC

Appendix D



Figure 4. Conceptual model for seamless billing process for the professional services of BAMC's trauma surgeons

Appendix E

A. Overview of Case Study

1. This exploratory case study will show how a third-party billing process can be developed to obtain reimbursement for professional medical services of the trauma surgeons who deliver care at Brooke Army Medical Center.
2. The proposed theoretical foundation for the study is healthcare revenue cycle processes within the framework of business process reengineering.
3. This study has two propositions.
 - i. A reasonably accomplishable and seamless process exists to efficiently and to effectively obtain third-party reimbursement for the professional services of trauma surgeons delivering care in military treatment facilities.
 - ii. No legal barriers (statutory, regulatory, or judicial) exist preventing the implementation of a process to obtain third-party reimbursement for the professional services physicians who deliver care in military treatment facilities.
4. While the larger unit of analysis course of developing the billing process for the trauma surgeon's professional services, the development of the billing process will be broken down into six units. The embedded units are developing the process (1) Prior to the study; (2) Patient intake; (3) Medical documentation; (4) Coding (5) Billing; and (6) Collections/Denials management.

B. Field Procedures

1. Researcher (Lonnie Hosea) must identify himself as an active duty Navy Nurse who is a resident student (Army-Baylor Healthcare Administration Program) at University Health System.
2. All study data will be collected by or sent to Lonnie Hosea.
3. General sources of information will be process stakeholders at Brooke Army Medical Center (BAMC), the Army, University Physicians Group (UPG), and TRICARE Management Activity Uniform Business Offices as well as statutory, regulatory, and healthcare industry literature.
4. Multiple meetings, interviews, and document reviews will be required.
5. All embedded units of analysis will be analyzed concurrently.
6. The tentative start and end dates for this study are Wed, October 6, 2004 and

C. Case Study Questions

1. Prior to Study
 - a. Who grants BAMC's Level I trauma facility status?
 - b. What is the current third-party billing system?
 - c. Does the process have executive steering committee support? Who?
 - d. Is there a sponsor for the process improvement team?
 - e. Who is the Third-Party Collections Program Officer at BAMC?
 - f. Is there a formal charter?
 - g. What are the assumptions?
 - h. What is the schedule and are there any deadlines?
 - i. Who is responsible for what in the process design?

Appendix E-2

- j. What resources will be needed? Any information regarding the cost of new resources?
 - k. Who are the organizational stakeholders? What are their interests?
 - l. How are the stakeholders impacted by the lack of third-party reimbursement?
 - m. How is care documented at BAMC (e.g., paper, and/or electronic documents)?
 - n. What are the BAMC (or Army/other government) directives and/or policies relating to revenue cycle management?
 - o. What are the regulations, policies, laws, and assumptions underlying the process?
 - p. How does this BPR fit in (or not) with BAMCs strategic plan? Any synergies for the process to support the strategic plan?
 - q. What are the contextual forces to creating this process and how will these forces affect the final process product?
 - r. What are the overall (preliminary) performance goals for the overall process?
 - s. Are there any constraints placed on the process design?
2. Patient Intake
- a. What is the current process?
 - b. Who owns this process?
 - c. Flowchart new process.
 - d. What are the assumptions?
 - e. Who are the stakeholders?
 - f. Is there any guidance from TRICARE or AMEDD regarding best business practices or guidelines?
 - g. What are the human resource requirements?
 - h. What are the job specifications?
 - i. What are the facility/system requirements?
 - j. Are there any current information systems that will help/hinder process or any new information systems that are required for the process?
 - k. How will the documentation be performed?
 - l. What is the end-state for the process and how will success be measured?
 - m. What is the turnover in patient intake staff?
 - n. How will turnover and work environment (e.g., pay, clear performance expectations) be mitigated to improve continuity of information flow?
 - o. Are goals for personnel performance realistic, measurable, and meaningful?
3. Medical Documentation
- a. What is the current process?
 - b. Who owns this process?
 - c. Flowchart new process.
 - d. What are the assumptions?
 - e. Who are the stakeholders?
 - f. Are there any current information systems that will help/hinder process or any new information systems that are required for the process?

Appendix E-3

- g. Is there any guidance from TRICARE or AMEDD regarding best business practices or guidelines?
 - h. What are the human resource requirements?
 - i. What is the end-state for the process and how will success be measured?
 - j. Who will measure metric(s)?
 - k. Are there any best practices that can be adhered to?
 - l. How does the organization determine that documentation is being optimized to obtain best possible reimbursement?
 - m. How will the improvements be accomplished (e.g., training, new computers)?
 - n. Are goals for personnel performance realistic, measurable, and meaningful?
4. Coding
- a. What is the current process?
 - b. Who owns this process?
 - c. Flowchart new process.
 - d. What are the tangible (or intangible) costs and benefits of different options within the process?
 - e. What are the assumptions?
 - f. Who are the stakeholders?
 - g. Are there any current information systems that will help/hinder process or any new information systems that are required for the process?
 - h. Is there any guidance from TRICARE or AMEDD regarding best business practices or guidelines?
 - i. Who will perform the coding function?
 - j. Where (physically) will coding be performed?
 - k. What are the human resource requirements?
 - l. What is the end-state for the process and how will success be measured?
 - m. Who will measure metric(s) and who will they report to?
 - n. How do you identify needed improvements to the coding system?
 - o. How will the improvements be accomplished (e.g., training, new computers)?
 - p. Are goals for personnel performance realistic, measurable, and meaningful?
5. Billing
- a. What is the current process?
 - b. Who owns this process?
 - c. Flowchart new process.
 - d. What are the tangible (or intangible) costs and benefits of different options within the process?
 - e. What are the assumptions?
 - f. Who are the stakeholders?
 - g. Are there any current information systems that will help/hinder process or any new information systems that are required for the process?
 - h. Is there any guidance from TRICARE or AMEDD regarding best business practices or guidelines?
 - i. What are the human resource requirements?
 - j. What is the end-state for the process and how will success be measured?

Appendix E-4

- k. Who will measure metric(s) and who do they report to?
 - l. How will bills be filed—electronically or paper?
 - m. How will the bills be tracked, monitored, and reported?
 - n. How does University Physician's Group improve collections from 18%?
 - o. How do you identify needed improvements to the UPG's system?
 - p. How will the improvements be accomplished (e.g., training, new computers/system)?
 - q. What is the charge master based on?
 - r. Can AMEDD charge a different rate to non-beneficiaries (i.e., higher charges to reflect a different reimbursement function—BAMC is not funded to care for civilians, it is funded by DFAS (military personnel) and DoD Health Service Office to care for military beneficiaries?
 - s. What billing reports will be sent to BAMC?
 - t. How will reports be transmitted and how often will billing reports be sent to BAMC?
 - u. Who will the reports be sent to at BAMC and what responsibility will the BAMC stakeholder have?
 - v. How will BAMC become more aggressive regarding seeking reimbursement from patient automotive insurance?
 - w. Is BAMC currently billing workers compensation programs (is an effective process in place)? If not, does BAMC intend to seek a process?
 - x. Are goals for personnel performance realistic, measurable, and meaningful?
6. Accounts Receivable (aka Collections and Denials Management)
- a. What is the current process?
 - b. Who owns this process?
 - c. Flowchart new process.
 - d. What are the tangible (or intangible) costs and benefits of different options within the process?
 - e. What are the assumptions?
 - f. Who are the stakeholders?
 - g. Are there any current information systems that will help/hinder process or any new information systems that are required for the process?
 - h. Is there any guidance from TRICARE or AMEDD regarding best business practices or guidelines?
 - i. How do you identify needed improvements to the UPG's system?
 - j. Who will measure metric(s) and who will they report to?
 - k. How will the improvements be accomplished (e.g., training, new computers/system)?
 - l. What is the end-state for the process and how will success be measured?
 - m. What are the human resource requirements?
 - n. What billing reports will be sent to BAMC?
 - o. How will reports be transmitted and how often will billing reports be sent to BAMC?

Appendix E-5

- p. Who will the reports be sent to at BAMC and what responsibility will the BAMC stakeholder have?
 - q. How will funds flow upon collection?
 - r. How will the distribution of funds be determined?
 - s. Are goals for personnel performance realistic, measurable, and meaningful?
7. Tie the whole process up:
- a. How are the different processes linked?
 - b. Who owns and has responsibility for the overall revenue cycle process for trauma physician services billing—the organizational driver?
 - c. Is there any significant multidisciplinary organization (e.g., Council) that results from process engineering to continually monitor and manage for breaks in the process or opportunities for improvement?
 - d. List a few significant interactions between various embedded processes?
 - e. How will the newly designed process affect patients/patient's families?
 - f. What is the potential result?
 - g. What are the pitfalls?
 - h. Were there any lesson's learned from the process development?
 - i. What are the identified costs of the process and who will bear these costs of startup and ongoing costs?
 - j. What other BAMC processes does the trauma surgeon billing process connect with? Do these connections cause any conflicts? Synergies?
 - k. Are there any cultural factors within BAMC that have impacted on the process design? How?
 - l. Are there any cultural factors within BAMC that might hinder or help the process implementation?
 - m. Has there been any pilot testing of various parts of the new process? What were the results?
 - n. How feasible is the process for the long-term?
 - o. What are potential barriers to implementation of process and what are solutions (if any) to these barriers?
 - p. Is there any capital investment process that needs to be completed for the new process (e.g., Information Technology—Clinger Cohen Act requirement)?
 - q. Has there been (or is there) any staff—clinical, administrative, and/or clerical—resistance to change?
 - r. Have personnel been required to change roles? If so, how has management assisted the personnel to assume their new roles (e.g., training, counseling, mentoring).
 - s. Have any policies or regulations required change for the process to function optimally?
 - t. Has management had to alter in the way it makes decisions or in its roles function (e.g., ownership, responsibility, or decision-making responsibility for various parts of the process)?

Appendix E-6

D. Evaluation Criteria

1. The criteria for making process design decisions in this study are efficiency and effectiveness, as well as seamlessness and accomplishable (i.e. possible/practical/legal).
2. The decisions and evaluation criteria for this study will be derived from convergent information. Multiple sources of convergent data will be utilized as much as possible. Proposition one will be linked to all four criteria, while Proposition two will be linking only to the accomplishable criteria.
3. This review will require the stakeholders and process owners to provide input regarding the reliability and validity of the study as well as provide any disagreement with the study's evidence, linkages to propositions, conclusions, and implications. The review will serve as an additional evaluation of the study's validity.
4. A critical analysis of the study's report will be sought from key stakeholders and process owners prior to releasing the results of the study. These individuals will be hand delivered a paper copy of the report and given two weeks to respond. This review will require the stakeholders and process owners to provide input regarding the reliability and validity of the study as well as provide any disagreement with the study's evidence, linkages to propositions, conclusions, and implications. The review will serve as an additional evaluation of the study's validity.

Appendix F

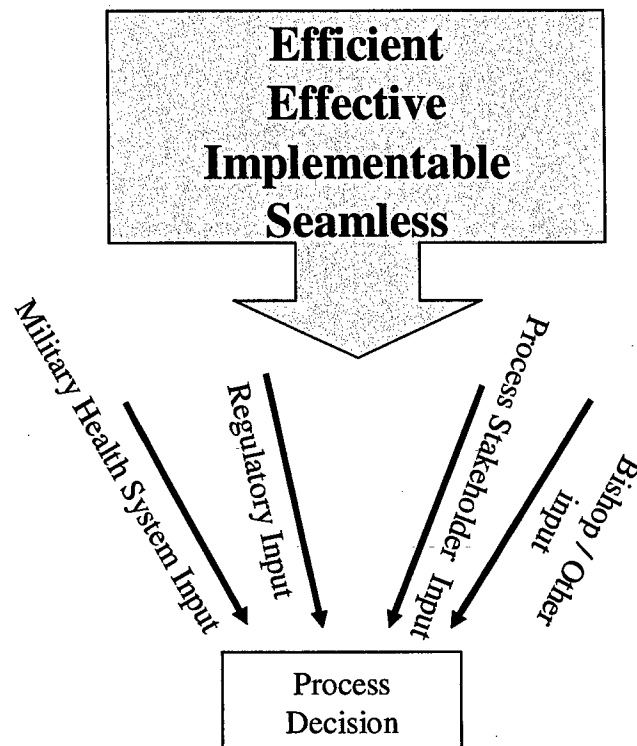


Figure 5. Convergent criteria for evaluating decisions

Appendix G

Glossary

Effectiveness: Promoting the maximum reimbursement of the allowable charge rates from each bill sent to third-party payers.

Efficiency: Generating a positive return on investment of the resources required to achieve reimbursement for professional services.

Accomplishable: Having a high possibility for actually implementing a decision—no legal, or practical barriers.

Traumatic injury: Diagnoses associated with the diagnosis codes 800.0 thru 959.9 in the International Classification of Disease, ninth edition (Hart & Hopkins, 2004).

Trauma surgeon: Any general surgeon (BAMC has no residency program for trauma surgeons) who cares for a patient diagnosed with a traumatic injury.

Appendix H

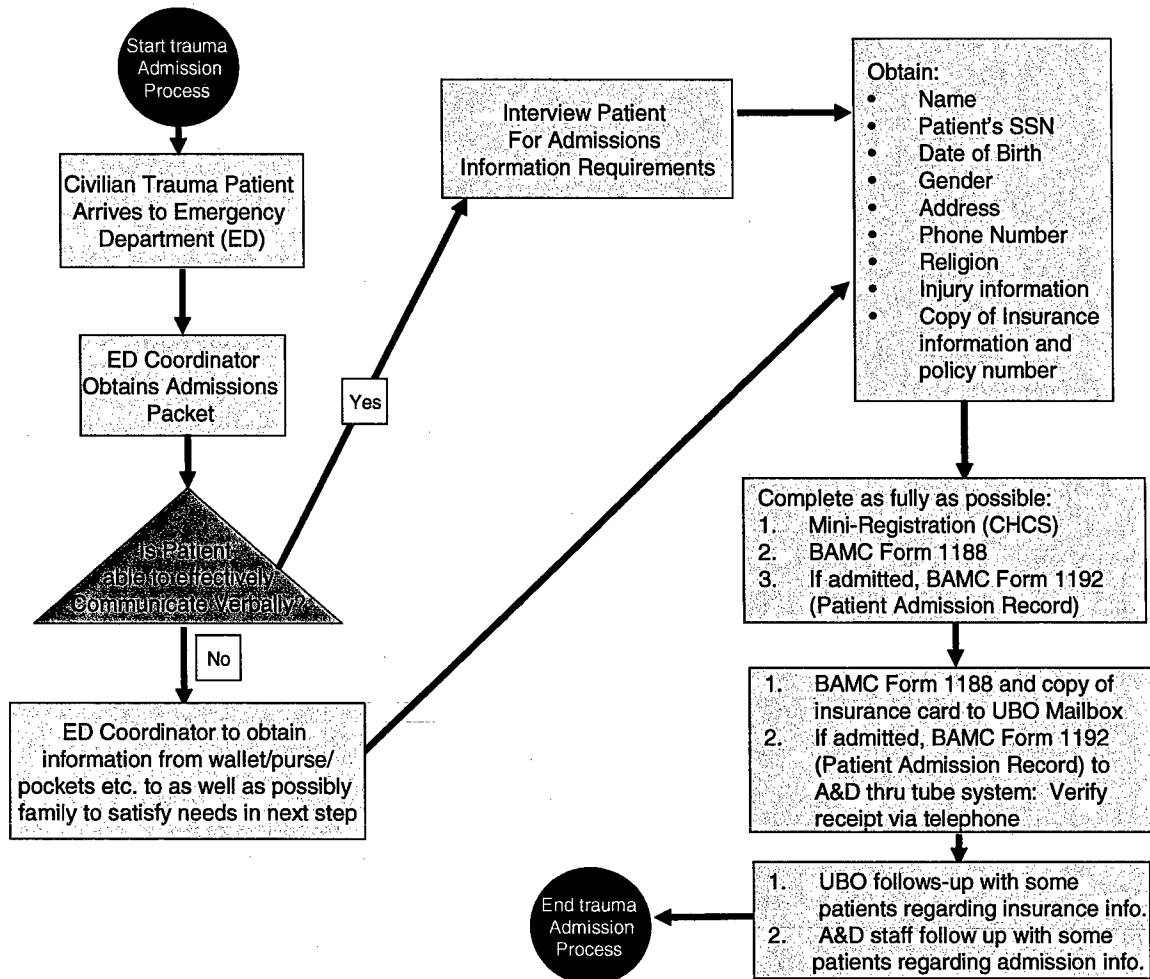


Figure 6. Current information flow process for trauma patient admitted to BAMC

Appendix I

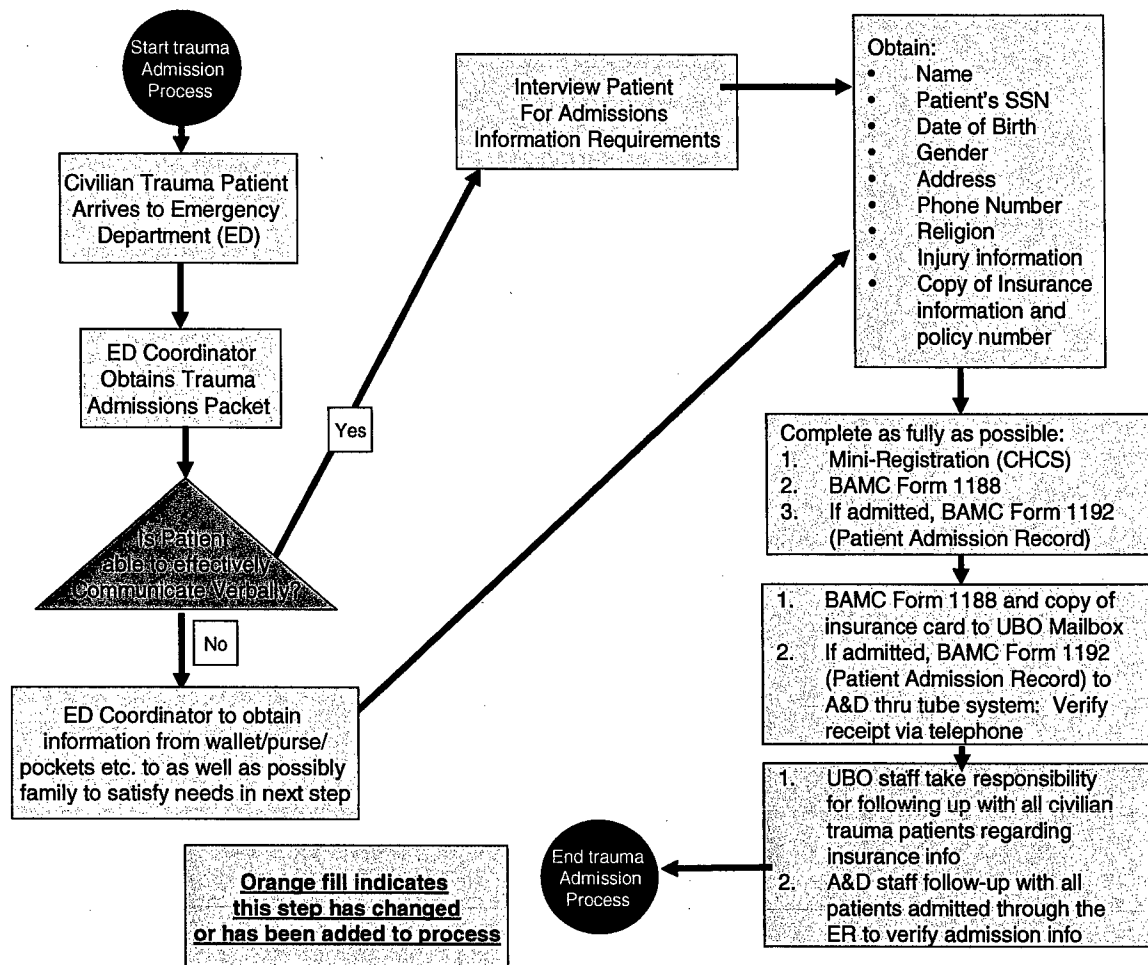


Figure 7. Reengineered information flow process for trauma patient admitted to BAMC

Appendix J

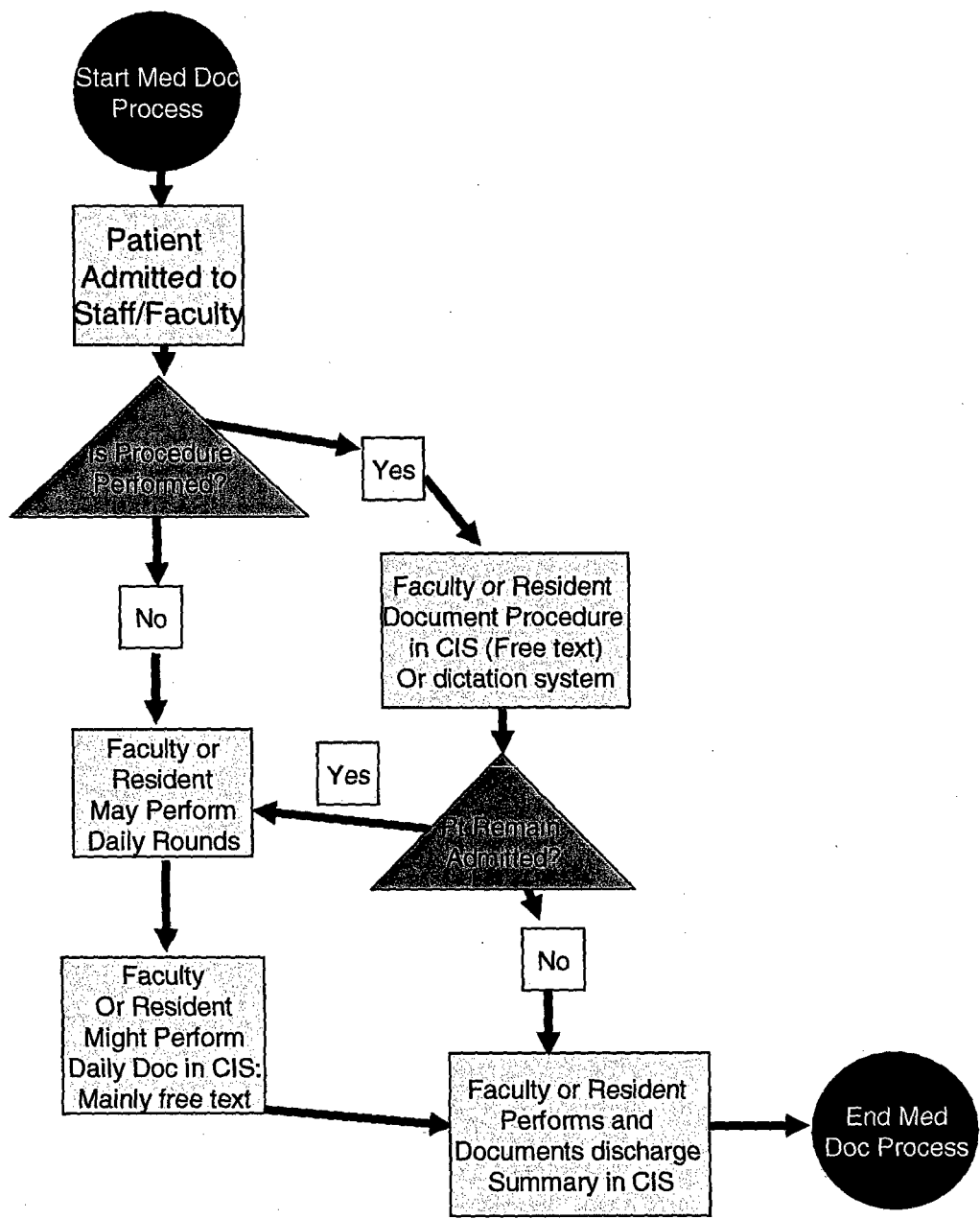


Figure 8. BAMC's current medical documentation process

Appendix K

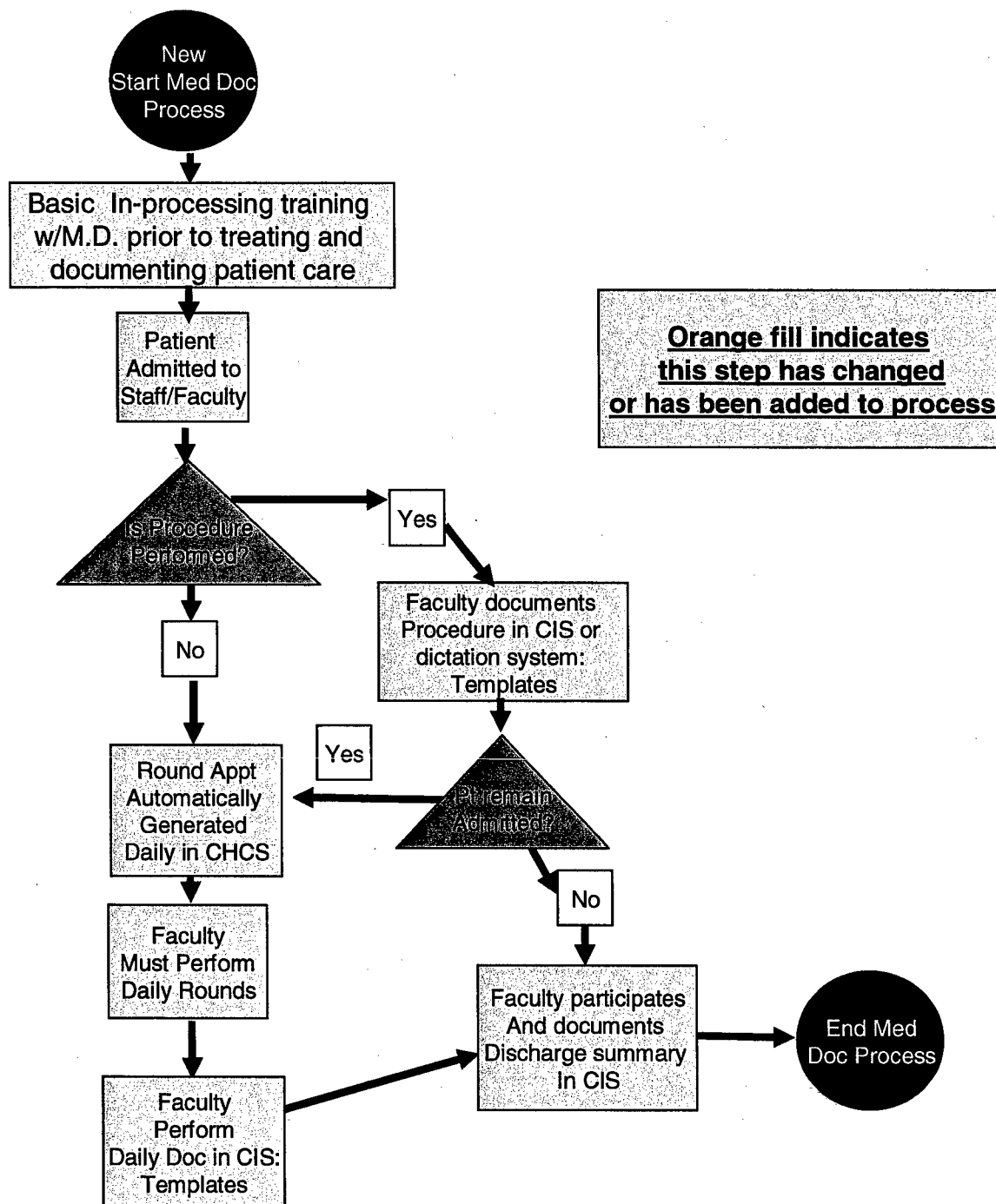


Figure 9. Reengineered BAMC medical documentation process

Appendix L

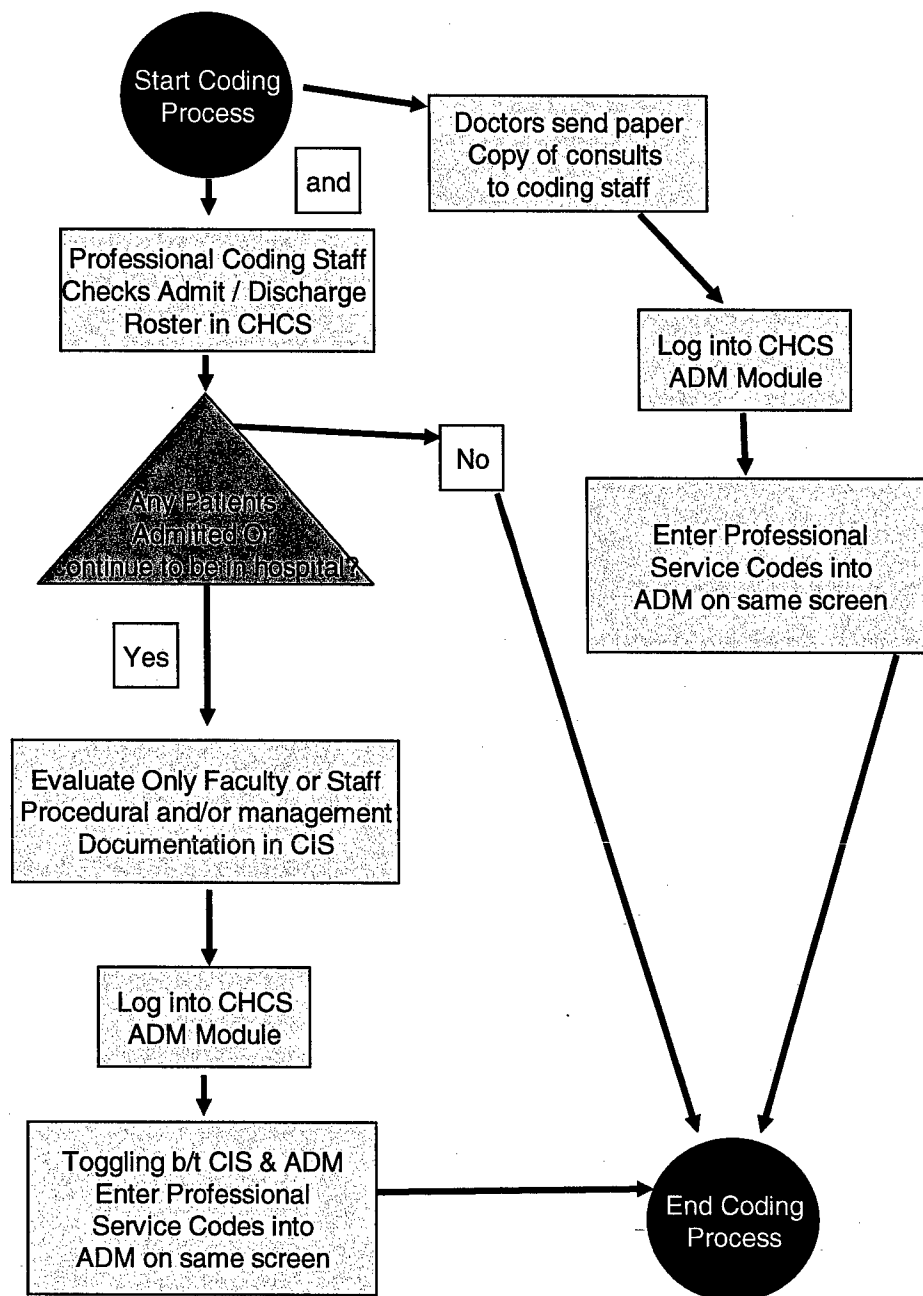


Figure 10. BAMC's current professional medical services coding process

Appendix M

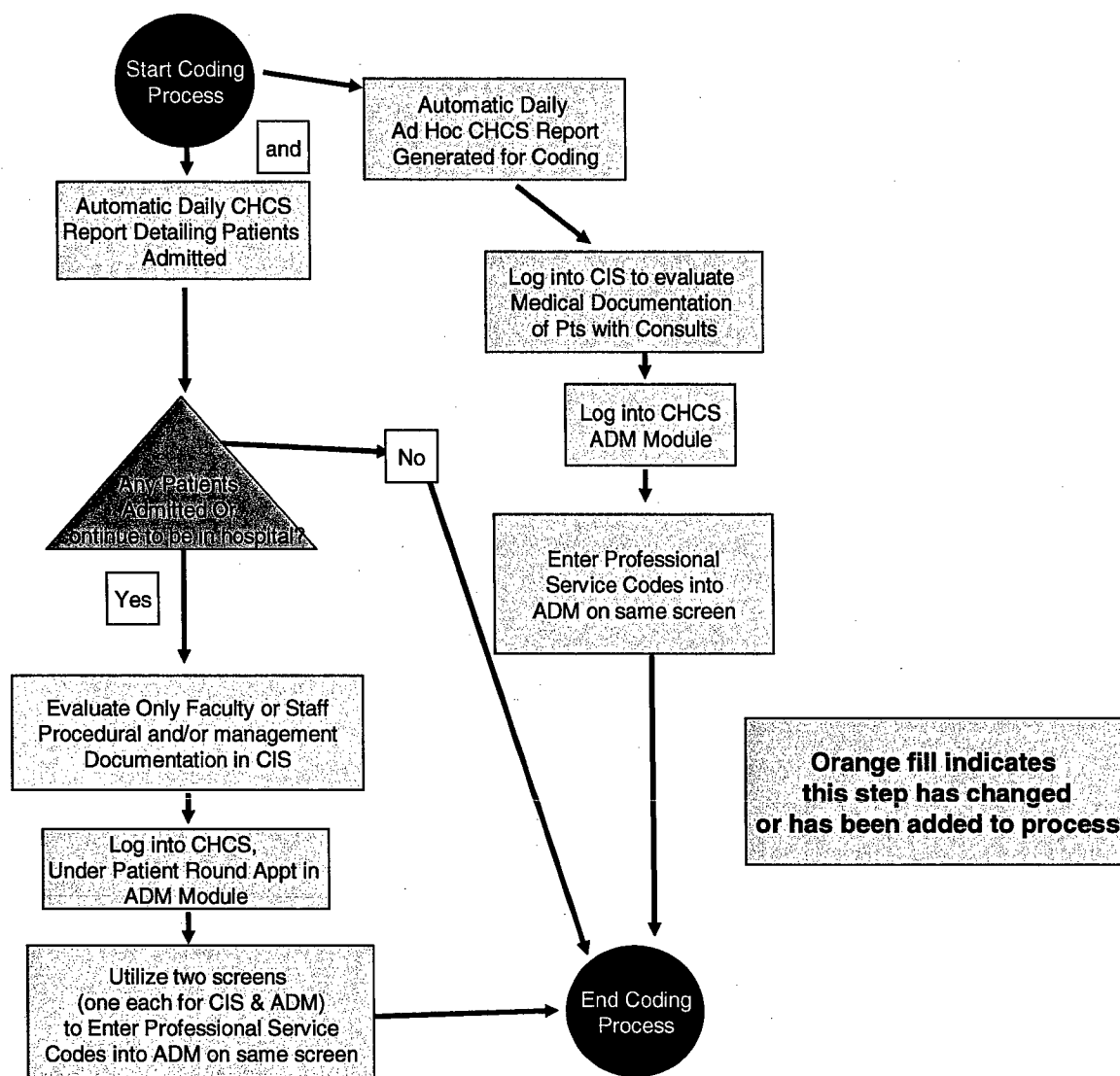


Figure 10. BAMC's Reengineered professional medical services coding process

Appendix N

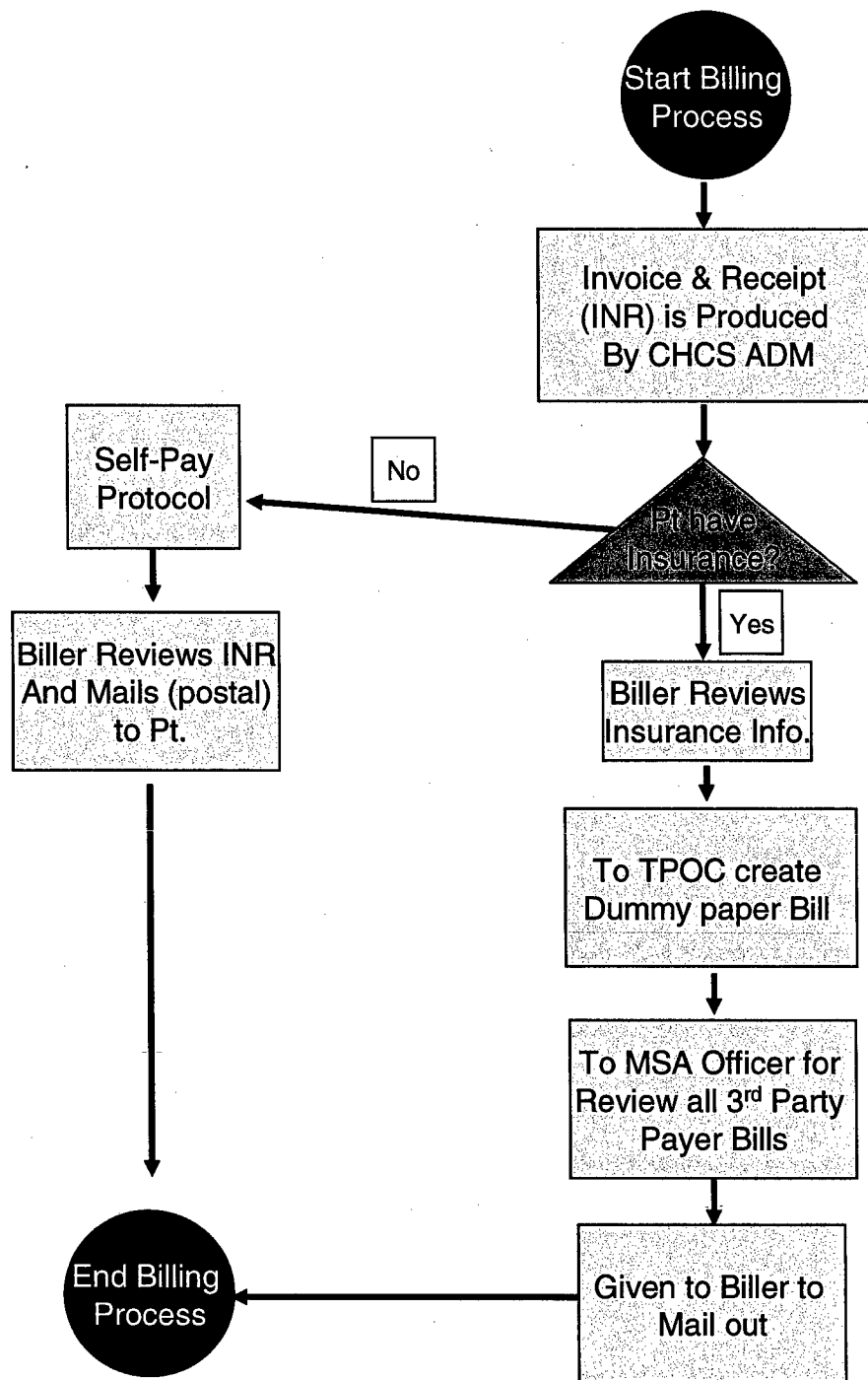


Figure 11. BAMC's current Medical Service Account billing process

Appendix O

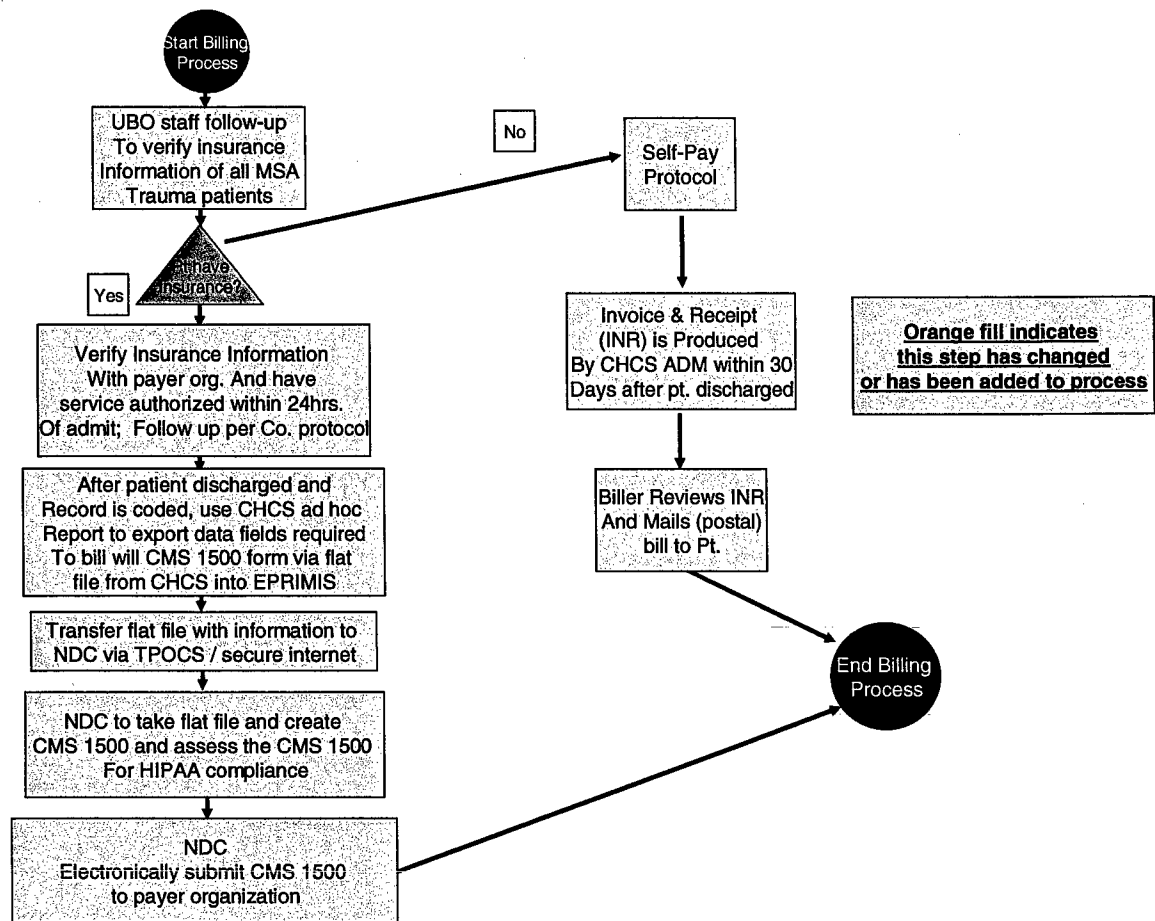


Figure 12. BAMC's reengineered Medical Service Account billing process

Appendix P

Instructions and data elements essential for completing the CMS 1500

(Courtesy of Office of the Chief Financial Officer, 2003, p. 107-112).

Item 1: Required

Type of Health Insurance Coverage

Insurance coverage. System defaults to "Other".

Item 1a: Required

Insured's ID Number

Insured's social security number.

Item 2: Required

Patient's Name (Last Name, First Name, Middle Initial),

Insured's last name, first name, and middle initial.

Item 3: Required

Patient Birthdate,

Eight-digit birth date (MM|DD|CCYY) of the patient.

Item 3: Required

Patient's Sex

Patient's sex

Item 4: Required

Insured's Name (Last Name, First Name, Middle Initial)

Insured's last name, first name, and middle initial.

Item 5: Required

Patient's Address

Mailing address and telephone number of the patient in the corresponding boxes.

Item 6: Required

Patient's Relationship to Insured

Relationship of the patient listed in Item 2 to insured listed in Item 4.

Item 7: Required

Insured's Address

Mailing address and telephone number of the insured in the corresponding box.

Item 8: Required

Patient Status

Marital status and full- or part-time student.

Appendix P-2

Item 9: Required, if applicable

Other Insured's Name

If the yes box is checked in Item 11D, then this section (Items 9–9D) must be filled out. Name of the insured person (last, first, middle initial).

Item 9A: Required, if applicable

Other Insured's Policy or Group Number

Other insured's insurance policy or group number.

Item 9B: Required, if applicable

Other Insured's Date of Birth/Sex

Eight-digit date of birth (MM|DD|CCYY). Check the appropriate box indicating the sex of this person.

Item 9C: Required, if applicable

Employer's Name or School Name

Employer's name or school name of the other insured person.

Item 9D: Required, if applicable

Insurance Plan Name or Program Name

Name of the insurance plan or program related to the other insured person.

Item 10: Required, if applicable

Is Patient's Condition Related To: (Auto Accident/Other Accident)

Check the appropriate box if the patient's condition is related to any of the following: employment (MAC), auto accident, or other accident.

Item 10D: Not Required

Reserved For Local Use

Blank

Item 11: Conditional

Insured's Policy Group or FECA Number

Insured's policy group or FECA number.

Item 11A: Required

Insured's Date of Birth/Sex

Eight-digit date of birth (MM|DD|CCYY). Check the appropriate box indicating the sex of the insured.

Item 11B: Conditional

Employer's Name or School Name

Employer's name or school name of the insured.

Appendix P-3

Item 11C: Required

Insurance Plan Name or Program Name

Name of the insurance plan or program of the insured.

Item 11D: Required, if applicable

Is There Another Health Plan Benefit?

If 'Y' is checked, Items 9-9D must be completed

Check the appropriate box to indicate whether or not there is another health insurance benefit.

System defaults to "No."

Item 12: Required with a default ("Signature on file" is acceptable)

Patient's or Authorized Persons Signature

This item is automatically populated with the following statement, "Assignment of Benefits is assumed under 10 U.S.C. 1095."

Item 13: Required with a default ("Signature on file" is acceptable)

Insured's Authorized Person's Signature

This item is automatically populated with the following statement, "Assignment of Benefits is assumed under Title 10 U.S.C. 1095" and with "Signature on file."

Item 14: Required, if applicable

Date of current Illness, Injury, or Pregnancy

Current date of illness, injury or pregnancy (MM|DD|CCYY).

Item 15: Required, if applicable

If Patient Has Had Same or Similar Illness

Past occurrence date (MM | DD | CCYY) of illness or injury if it is the same or similar illness or injury.

Item 16: Not Required

Dates Patient Unable to Work in Current Occupation

Blank

Item 17: Conditional

Name of Referring Physician or Other Source

Name of the Physician who referred or ordered the service.

Item 17a: Conditional

ID Number of Referring Physician

Facility ID number.

Appendix P-3

Item 18: Required, if applicable

Hospitalization Date Related to Current Services

Eight-digit date (MM|DD|CCYY) if the services were provided subsequent to a related hospitalization.

Item 19: Not Required

Reserved for Local Use

Blank

Item 20: Not Required

Outside Lab

Blank

Item 21: Required

Diagnosis or nature of illness or injury

ICD-9-CM diagnosis code for the patient's diagnosis/condition. The ICD-9-CM diagnosis code must be coded to the highest specificity and sequenced in order of priority (e.g., primary or secondary condition).

Item 22: Not Required

Medicaid Resubmission

Blank

Item 23: Required, if applicable

Prior Authorization Number

Prior authorization number for those procedures requiring prior authorization.

Item 24A: Required

Dates of Service

Eight-digit date (MM|DD|CCYY) of the time period in which the services were performed.

Item 24B: Required

Place of Service

Code "26" represents an MTF. This code should automatically print on all CMS-1500s. If a code other than "26" appears, a prompt will ask the user to verify.

Item 24C: Not required

Type of Service

Blank

Item 24D: Required

Procedures, Services, or Supplies

HCPCS/CPT code, including modifiers when applicable, for the procedures, services, or supplies furnished to the patient.

Appendix P-4

Item 24 E: Required

Diagnosis Code

Pointer number (1–4) from Item 21 that is applicable to that specific procedure, service or supply furnished.

Item 24F: Required

Charges

Charge for each listed service.

Item 24G: Required

Days or Units

Number of days or units that were supplied for that particular HCPCS/CPT code listed in that line. If only one service was provided, the numeral 1 must be entered. This field will default to 1.

Item 24H: Not Required

EPSDT Family Plan

Blank

Item 24I: Not Required

EMG

Blank

Item 24J: Optional

COB

Blank

Item 24K: Not Required

Reserved for Local Use

Blank

Item 25: Required

Federal Tax ID Number

Federal Tax ID number for the facility.

Item 26: Required

Patient's Account Number

Patient's account number that is assigned by the MTF's accounting system to identify that particular patient.

Item 27: Required

Accept Assignment

TPOCS defaults to "X" in the Yes box indicating assignment of benefits is accepted pursuant to Title 10 U.S.C. 1095.

Appendix P-5

Item 28: Required

Total Charge

Total charges for the services provided (e.g., sum of charges in Item 24F).

Item 29: Conditional

Amount Paid

\$0.00 indicates no up-front monies were paid. DoD does not collect co-payments for services rendered.

Item 30: Conditional

Balance Due

Total amount of the charges. This should match Item 28.

Item 31: Required

Signature of Physician or Supplier

Signature of the provider of service or supplier, or his representative, and the date the form was signed. A signature or stamp is required here. Some MTFs use this area to indicate who the biller was and that the bill has been reviewed.

Item 32: Required

Name and Address of Facility Where Services Were Rendered

Name, address, and telephone number of the MTF.

Item 33: Required

Physician, Supplier Billing Name, Address, Zip Code, Phone, PIN#, and Group#

Name of the physician who rendered the services. It is now required that the provider be identified with their credentials (e.g., MD, NP, PA, RN, LPN). The system should include the provider's credentials following the name. **UPIN:** MTFs should continue using OTH000 or VaD000, based on payer request, as the assigned surrogate Unique Provider Identification Number (UPIN).

Appendix Q

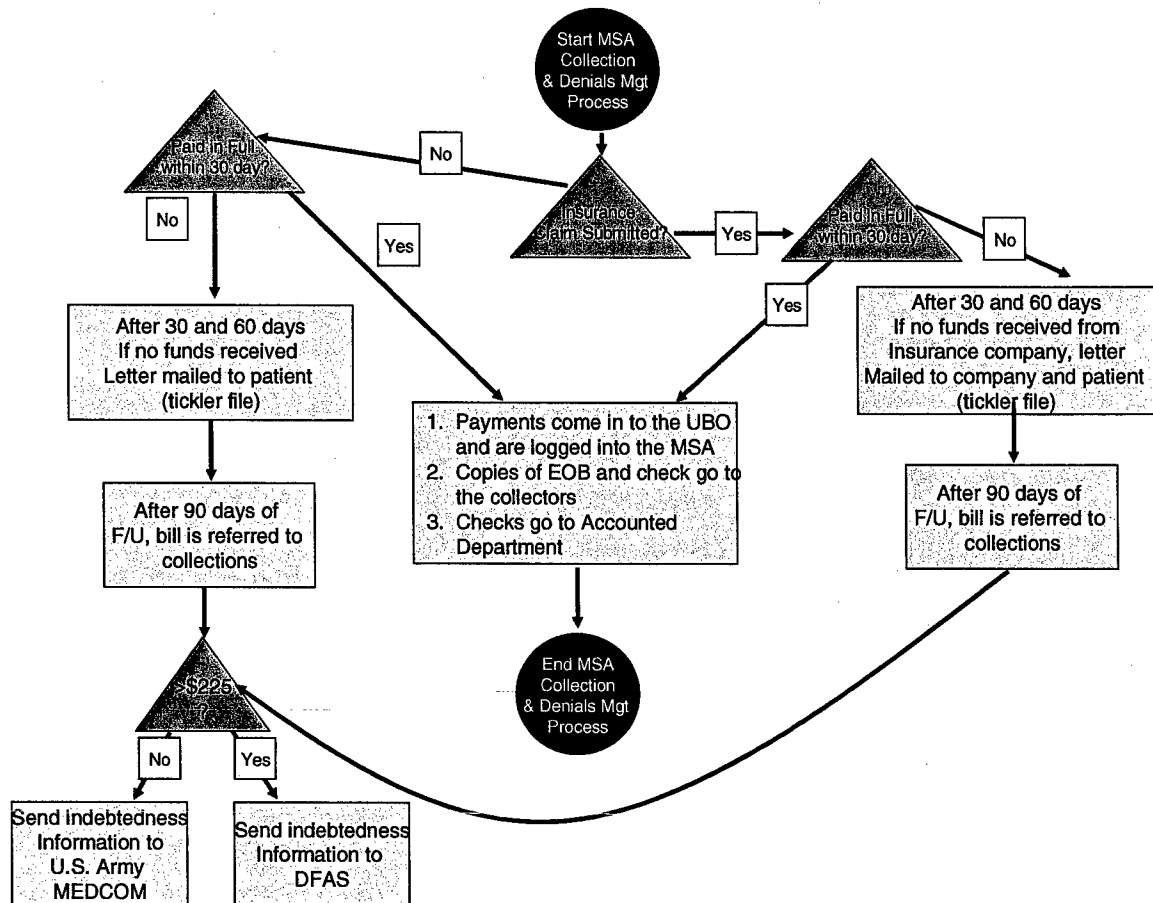


Figure 13. BAMC's current Medical Service Account collections and denials management process

Appendix R

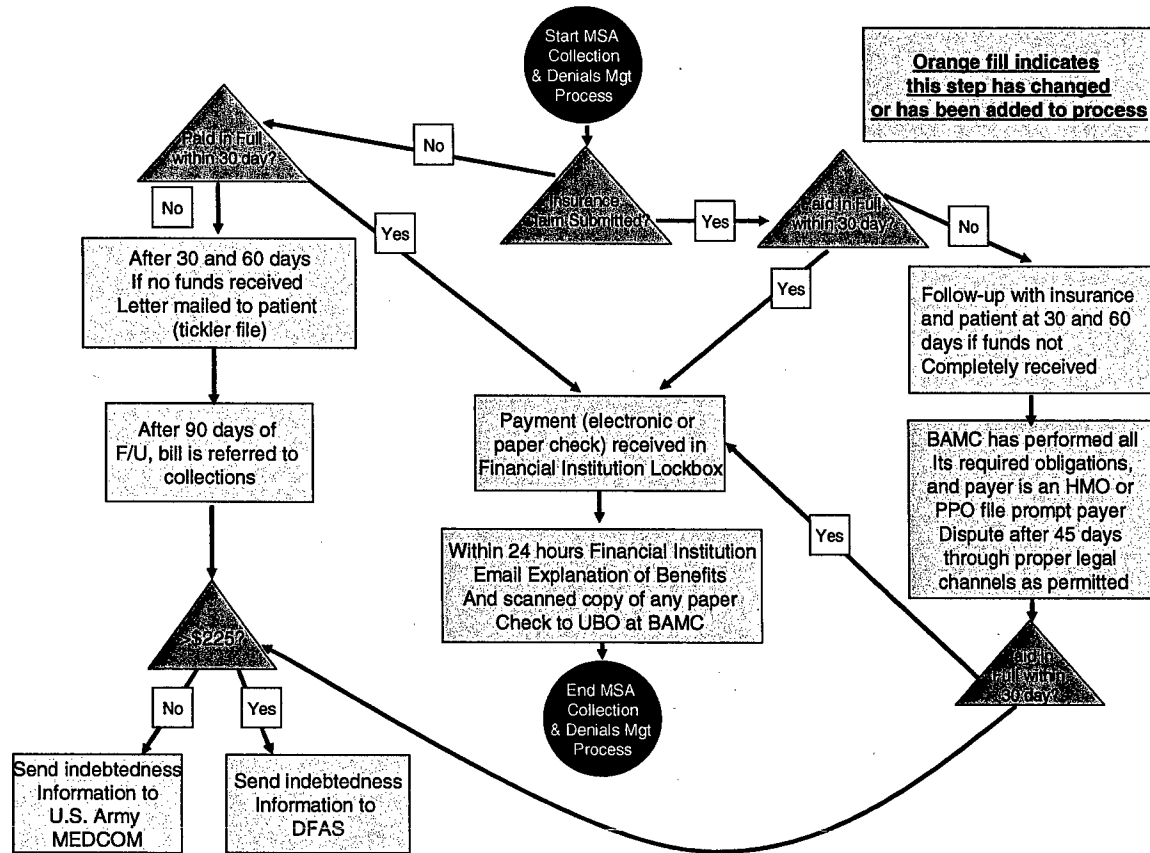


Figure 14. BAMC's reengineered Medical Service Account collections and denials management process

Appendix S

Sequential List of Case Study Interviews

(Unless otherwise noted, these are staff members of
Brooke Army Medical Center, San Antonio, Texas)

1. Barbara Guerra, Vice President for Patient Accounting, University Physicians Group, Tuesday, September 24, 2004
2. LTC T. Mindingall, Chief, Resource Management Division and Clenton Ballard, Chief, Uniform Business Office, Wednesday, October 6, 2004
3. Bill Rasco, Chief Executive Officer, Greater San Antonio Hospital Council, Wednesday, October 20, 2004
4. COL Suzanne Cuda, Chief, Department of Health Care Operations and Dawn Rusing, Senior Data Analyst, Tuesday, October 26, 2004
5. LTC Mindingall, Chief, Resource Management Division, Friday, November 5, 2004
6. Dawn Hunt, Coding and Compliance Analyst, and Janine Norton, Auditor, Tuesday, November 9, 2004
7. Clenton Ballard, Chief, Uniform Business Office, Monday, November 15, 2004
8. Clenton Ballard, Chief, Uniform Business Office, Thursday, November 18, 2004
9. Cynthia Worl, Data Analyst, Friday, December 3, 2004
10. Dawn Hunt, Coding and Compliance Analyst, and Janine Norton, Auditor, Monday, December 13, 2004
11. Monica Dewitt, Program Manager, Trauma Division, Friday, December 3, 2004
12. Ruth Spriggs, Director, Patient Billing Services, University Health System, Wednesday, December 8, 2004
13. Al Vega, Supervisor, ED Coordinators, Thursday, January 20, 2005
14. SGT Kelly Armstrong, Non-Commissioned Officer In Charge, A & D Office, Thursday, January 20, 2005
15. Wendy Funk, Analyst, Kennel and Associates, Tuesday, February 8, 2004
16. Sherry Johnson, Internal Auditor, University Health System, Thursday, February 17, 2005
17. James Neal, Manager, Clinical Information Systems, Thursday, February 17, 2005
18. Russell DeVries, Budget Manager, Wednesday, April 6, 2005